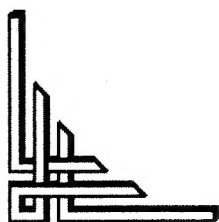


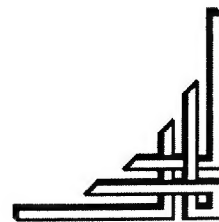
MUSIC
ATELIER


AT **90**

Owner's Manual




Roland®





CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



ATTENTION RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

WARNING - When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions before using the product.
2. Do not use this product near water — for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
8. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
9. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
10. The product should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled onto the product; or
 - C. The product has been exposed to rain; or
 - D. The product does not appear to operate normally or exhibits a marked change in performance; or
 - E. The product has been dropped, or the enclosure damaged.
11. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

For the USA

This product may be equipped with a polarized line plug (one blade wider than the other) . This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.

For Canada

For Polarized Line Plug

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.
ATTENTION: POUR ÉVITER LES CHOCs ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU' AU FOND.

For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE: NEUTRAL
BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
 The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
 Under no circumstances must either of the above wires be connected to the earth terminal of a three pin plug.

Thank you, and congratulations on your choice of the Roland AT-90 "Atelier Series" Organ. The AT-90 is an electronic organ which provides a generous collection of luscious organ sounds. In addition, it is designed to be easy to learn and use. In order to take full advantage of the wealth of features that have been made available, please take the time to read this manual in its entirety.

FEATURES

● Deluxe high-quality cabinet

● Full-scale pedal board

A 25-note full-scale pedal board is provided. The pedal board can use a combination of any two voices for an even richer sound.

● Additive synthesis Footage Tablets

The Footage Tablets allow you to combine sounds of differing pitches to create a variety of new sounds, for an even richer organ sound.

● Harmony Intelligence function

When the Harmony Intelligence function is used, the melody played on the upper keyboard will be automatically accompanied by a accompanying harmony based on the chords played on the lower keyboard. Eight types of harmony are provided.

● A variety of built-in rhythms specially created by USA musicians

The AT-90 provides 53 types of rhythms for you to play along with. In addition, the Arranger function can be used to add an automatic accompaniment to the rhythm based on the chords you play in the lower keyboard. Additional Music Style Disks (MSA series) can be purchased to add new rhythms.

● Keyboard Split function for performance versatility

The lower keyboard can be split into different areas to play multiple parts, such as the Solo part or Bass part, allowing a degree of performance versatility that rivals three- and four-manual organs. Drum sounds and sound effects can also be played.

● SMF Music Data (sold separately) can be utilized

The built-in Composer allows cassette recorder-like operation. Not only can you record your own playing, but also load and playback a wide variety of SMF Music Data and play along with it.

● Illumination switch


Illumination is provided for the front panel, the music stand, and the bass pedals.

● A dedicated computer connector and a mic input with echo are also provided

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IBM, PC/AT are registered trademark of International Business Machines Corporation.

The GS logo () is a trademark of Roland Corporation.

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IMPORTANT NOTES

In addition to the items listed under Safety Precautions inside the front cover, please read and observe the following:

Power Supply

- Before connecting this unit to other devices, turn off the power to all units; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise; an electric motor or variable lighting system for example.

Placement

- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- Observe the following when using the unit's disk drive. For further details, refer to "Before Using Disks".
 - Do not place the unit near devices that produce a strong magnetic field (eg., loudspeakers).
 - Install the unit on a solid, level surface.
 - Do not move the unit or subject it to vibration while the drive is operating.
- Make sure you always have the instrument placed so it is level and sure to remain stable. Otherwise, if played while tilted, you risk causing damage to the keyboard as a result of the unnatural degree of force that might be applied to certain parts of it.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Memory Backup

- Please be aware that the contents of memory may at times be lost; when the unit is sent for repairs or when by some chance a malfunction has occurred. Important data should be stored on a floppy disk, or written down on paper (if possible). During repairs, due care is taken to avoid the loss of data. However, in certain cases (such as when circuitry related to memory itself is out of order), we regret that it may not be possible to restore the data.

Additional Precautions

- Protect the unit from strong impact.
- Never strike or apply strong pressure to the display.
- A small amount of heat will radiate from the unit during normal operation.
- Before using the unit in a foreign country, consult with qualified service personnel.
- Be careful that the bench lid does not pinch your hand.



General MIDI System

The General MIDI System is a set of recommendations which seek to provide a way for going beyond the limitations of proprietary designs, and standardize the MIDI capabilities provided by sound generating devices.

If you use a sound generating unit which carries the General MIDI logo, you will be able to faithfully reproduce any song data which also carries the General MIDI logo.



GS Format

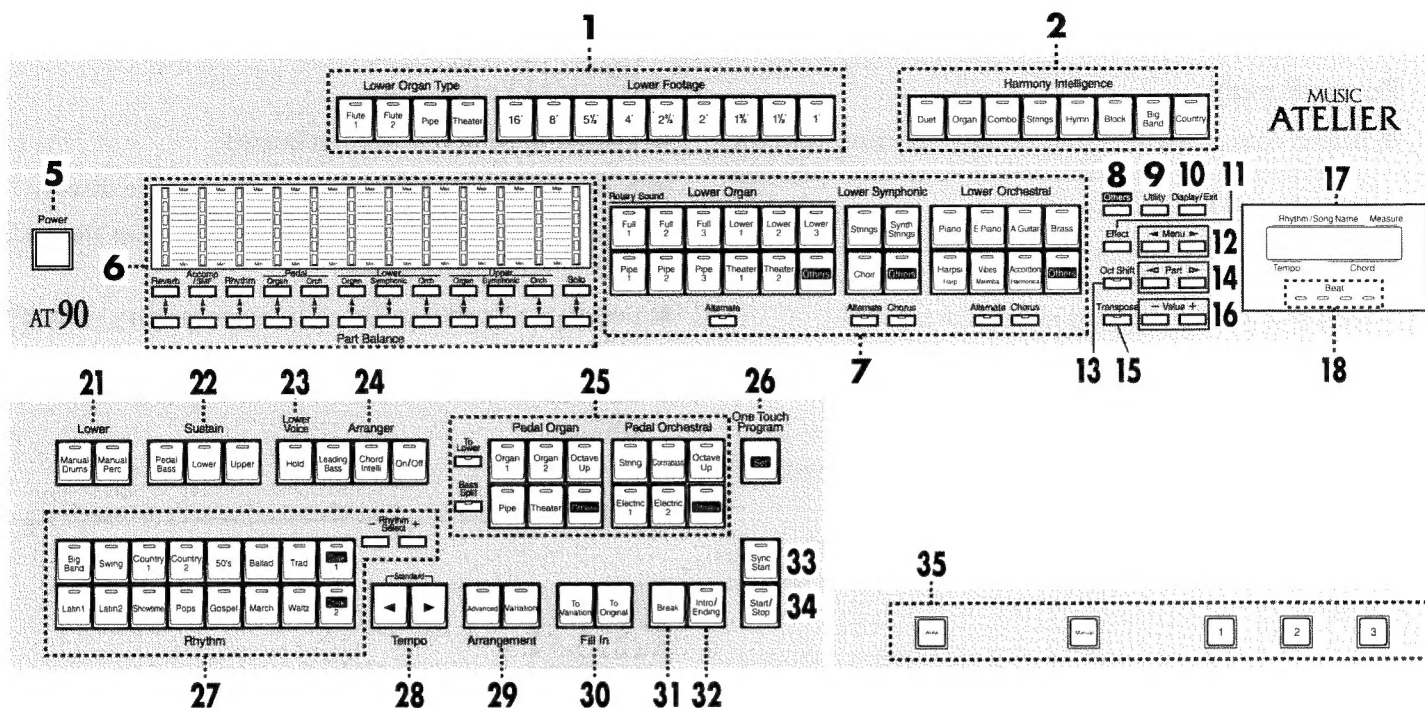
The GS Format is Roland's universal set of specifications which were formulated in the interest of standardizing the way in which sound generating devices will operate when MIDI is used for the performance of music. If you use a sound generating unit which carries the GS logo, you will be able to faithfully reproduce any commercially available song data which also carries the GS logo.

This product supports both General MIDI and GS. Song data which carries either of these logos can be accurately reproduced.

SMF

This device can playback Standard MIDI Files (720 Kbyte format, 3.5 inch floppy disk) such as SMF Music Data.

PANEL DESCRIPTIONS



1. Lower Footage

Lower Organ Type buttons (→p.19)
Lower Footage buttons (→p.19)

2. Harmony Intelligence buttons (→p.21)

3. Upper Footage

Lower Organ Type buttons (→p.19)
Upper Footage buttons (→p.19)
Percussion buttons (→p.20)

4. Others Preset button (→p.20)

5. Power switch (→p.14)

6. Part Balance buttons (→p.48)

The button located at the upper left adjusts the Reverb effect. (→p.31)

7. Lower voice select buttons (→p.16)

Lower Organ
Lower Symphonic
Lower Orchestral

8. Others button (→p.27)

9. Utility button (→p.51)

10. Display/Exit button (→p.45)

11. Effect button (→p.49)

12. Menu buttons (→p.49, 51)

13. Oct Shift button (→p.48)

14. Part buttons (→p.48, 49)

15. Transpose button (→p.49)

16. Value buttons

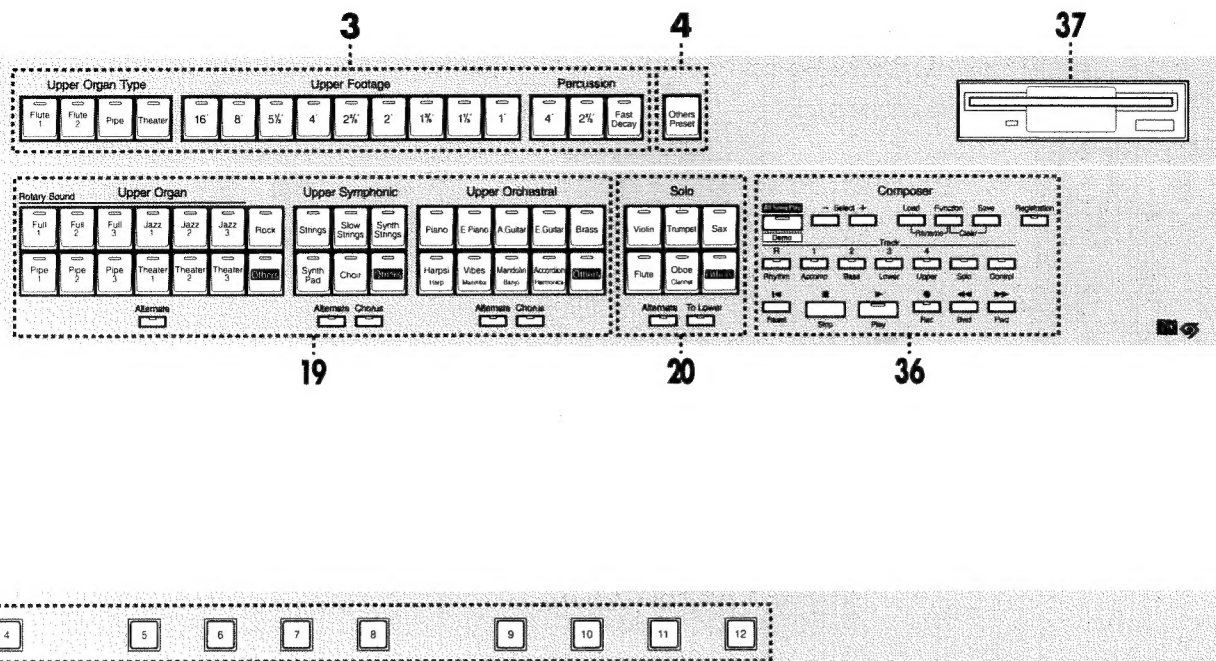
17. Display (→p.45)

18. Beat Indicator (→p.37)

19. Upper voice select buttons (→p.16)

Upper Organ
Upper Symphonic
Upper Orchestral

20. Solo voice select buttons (→p.18)



21. Lower

Manual Drums button (→p.30)
Manual Perc button (→p.30)

22. Sustain buttons (→p.32)

23. Lower Voice Hold button (→p.39)

24. Arranger

Leading Bass button (→p.38)
Chord Intelli button (→p.38)
Arranger On/Off button (→p.36)

25. Pedal Bass voice select buttons (→p.17)

Pedal Organ
Pedal Orchestral

26. One Touch Program button (→p.25)

27. Rhythm select buttons (→p.24, 29)

28. Tempo buttons (→p.37)

29. Arrangement

Advanced button (→p.25)
Variation button (→p.23, 25)

30. Fill In

To Variation button (→p.23, 25)
To Original button (→p.23, 25)

31. Break button (→p.23, 25)

32. Intro/Ending button (→p.26, 37)

33. Sync Start button (→p.36)

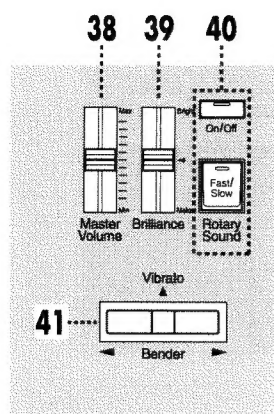
34. Start/Stop button (→p.23)

35. Registration buttons (→p.26)

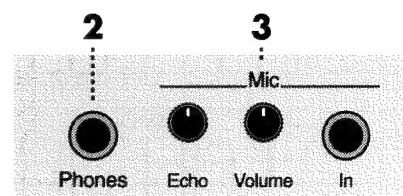
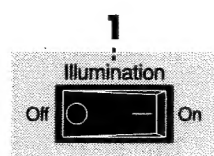
36. Composer

All Song play/Demo button (→p.15, 44)
Load button (→p.44, 47)
Function button (→p.54)
Save button (→p.43, 46)
Registration button (→p.46)

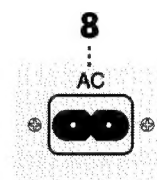
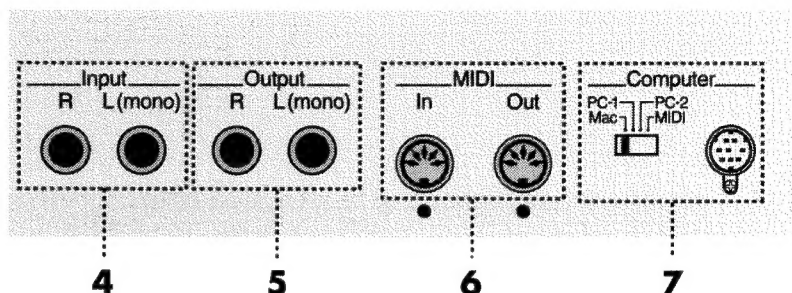
37. Disk Drive (→p.40)



Lower left of the keyboard



Rear



38. Master Volume slider (→p.14)

39. Brilliance slider (→p.35)

40. Rotary Sound

On/Off button (→p.22)

Fast/Slow button (→p.22)

41. Pitch Bender/Vibrato Lever(→p.35)

1. Illumination switch (→p.13)

2. Phones jack (→p.11)

3. Mic (→p.12)

Echo control

Mic Volume control

Mic In jack

4. Input jacks L (mono)/R (→p.12)

5. Output jacks L(mono)/R (→p.12)

6. MIDI connector Out/In (→p.59)

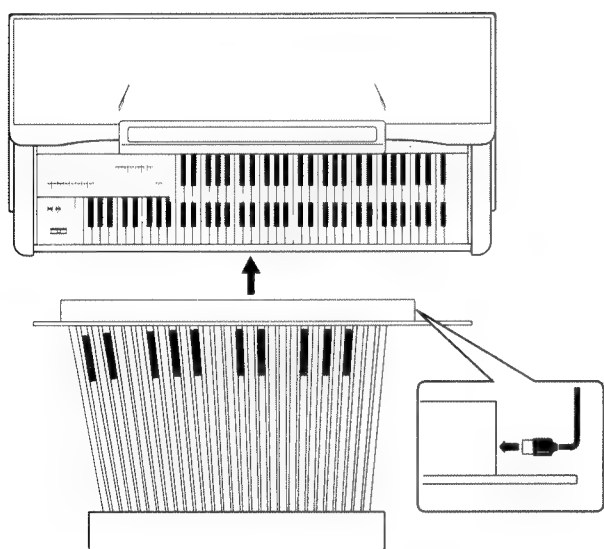
7. Computer connector (→p.60)

8. AC Inlet (→p.11)

BEFORE YOU BEGIN

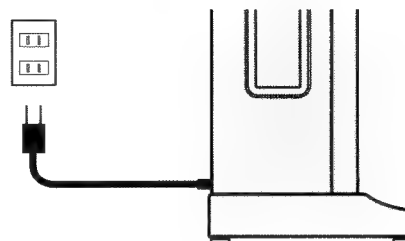
Attaching the pedal board

1. Detach the pedal cable that is temporarily fastened by a fastener to the board on the upper part of the expression pedal.
 2. Connect the pedal cable to the connector located at the right side of the pedal board.
 3. Press the pedal board firmly all the way back so that it no longer moves.
- * Do not remove the fastener. Before transporting the AT-90, be sure to bundle the pedal cable so that there is no slack, and fasten it to the fastener.



Connecting the Power Cord

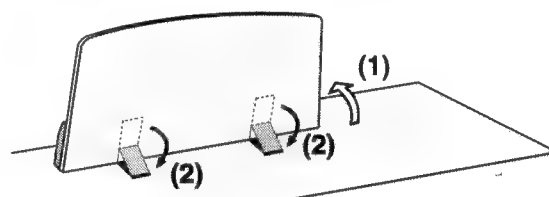
1. First, make sure that the Power switch at the panel's left side is OFF (not pushed in).
2. Connect the supplied power cord to the AC Inlet connector, then plug the other end into an AC outlet.



- * Only use the power cord supplied with this instrument.
- * Whenever you do not intend to use the instrument for extended periods of time, pull out the power cord from the AC outlet.

Setting up the music stand

- ✧ Lift the music stand, and adjust the metal joints as shown in the illustration below.



Opening the cover

- ✧ To open the cover, hold it with both hands and lift it straight up. Then, slide it to the rear.

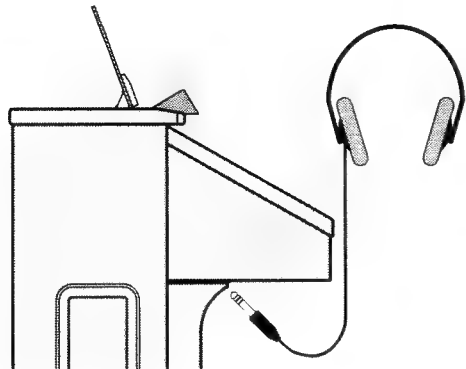


To close the cover, slowly pull it forward until it stops. Then, gently lower it into place.

- * Be careful not to get your fingers caught when opening or closing the cover. Adult supervision is recommended when small children are going to be using the instrument.
- * Make sure you don't have anything (such as sheet music) on the keyboard when you close the cover.

Using Headphones

- ✧ Accepts connection of headphones.



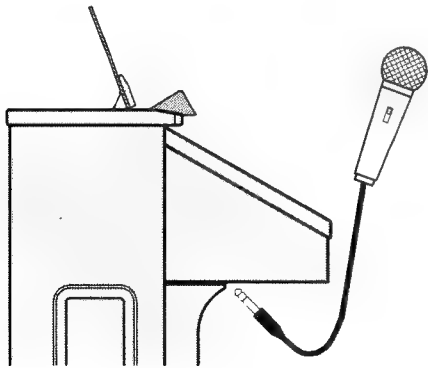
Because sound will no longer be output from the AT-90's speakers when you connect headphones, you can practice even late at night without disturbing others.

The volume level heard through headphones can be adjusted with either the Master Volume slider or the expression pedal.

- * Be careful, though, since excessive volume levels can cause damage to your hearing.
- * Be careful to avoid pulling the headphone cable. Applying excessive force will cause malfunctions.

Using a Microphone

1. Make sure that the Mic Volume control is lowered, then connect the Microphone to the Mic In jack.



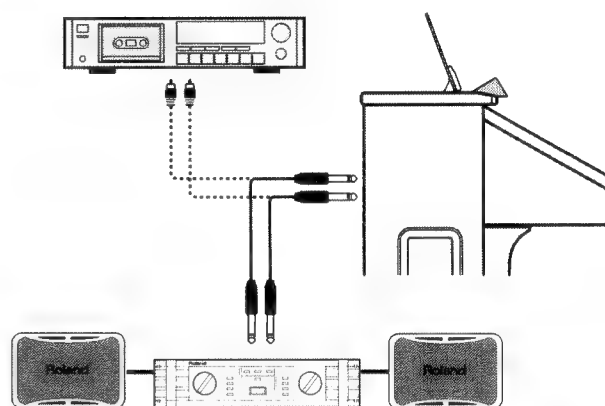
2. Adjust the Microphone volume and the amount of echo using the Volume and Echo controls, respectively.

You can enjoy singing as you play the AT-90, or singing along while music data (SMF Music Data, etc.: sold separately) is played back (→p.44).

- * Acoustic feedback (a squealing sound) can be caused by excessive Mic volume settings, or by the location of the Microphone relative to the AT-90. If this occurs, change the direction of the Microphone, or lower the Mic volume.

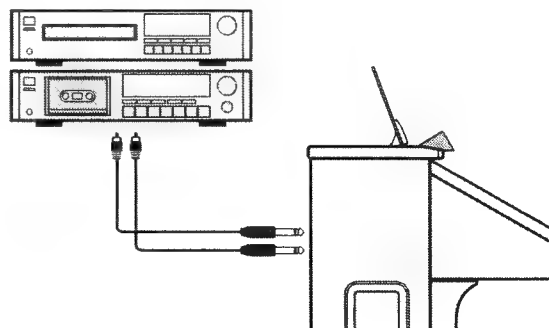
Using the output jacks

Connect here when you want your music to be sounded by a keyboard amplifier or other audio equipment. In addition, when you wish to record what you play on the AT-90 onto a tape recorder, connect a cable from here to the input jacks on your tape recorder.



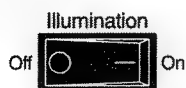
Using the input jacks

Connect a tape recorder or CD player here, and their sound will also be heard from the internal speakers along with what you play on the AT-90. This conveniently allows you to practice along with your favorite music.



Turning on the light

- ✧ After turning on the power, turn on the Illumination switch (located at the bottom left of the keyboard).

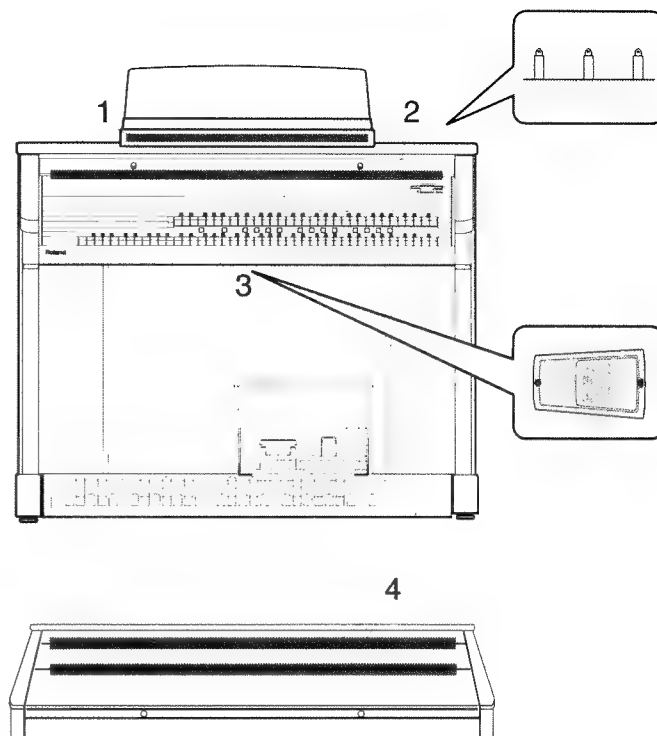


Lights will illuminate in three locations; the music stand, front panel, and the pedal board.

Cautions when using illumination

When illumination is used for an extended period, the light bulbs and the metal parts near the light bulb (see diagram below) will become hot. Be careful not to touch your hand or leg on these areas. In particular, be careful of the following four locations.

- 1. Inside the music stopper**
Do not insert your hand from below.
- 2. Panel illumination light bulb**
Do not touch the light bulb or nearby parts. When closing the lid, be sure to hold the handles.
- 3. Bulb cover under the keyboard (foot area)**
The entire cover will become hot. Be careful not to touch your leg to this area.
- 4. Metal portion of lid**
After closing the lid, do not touch this area.



Restoring all the factory default settings

Perform the procedure below to return all the Settings of the AT-90 to those preset by the factory (when the instrument was new).

- * Make sure there is no floppy disk in the disk drive before carrying out the procedure.
- ✧ Turn on the power while holding down the One Touch Program button.



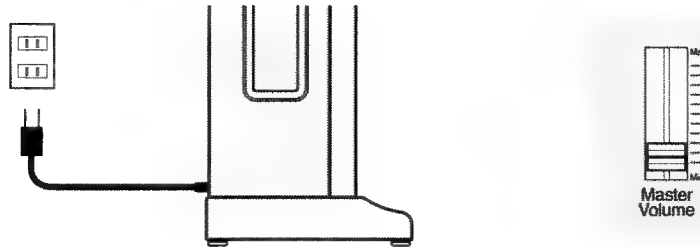
Factory Setup
is Loaded.

- * When you are using the instrument for the very first time, or it has remained unused for about a month or so, it will automatically be returned to the factory default settings when the power turned on.

Basic Operation - introduction to frequently-used functions

Start playing the AT-90

1. First, check that the power cord is connected, that the Master Volume slider is turned down.



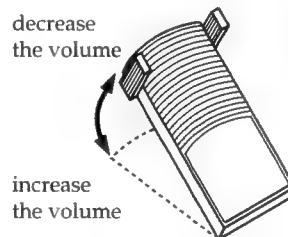
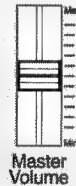
2. Press the Power switch to turn ON the power.



- * This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.

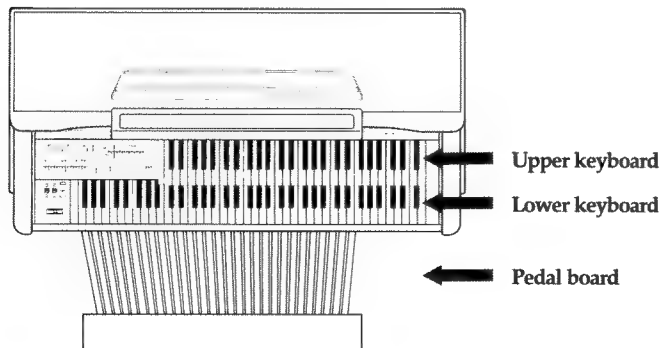
3. Use the Master Volume slider and the expression pedal to adjust the volume to an appropriate level.

The volume will be increased when the expression pedal is pressed down, and decreased when the pedal is returned.



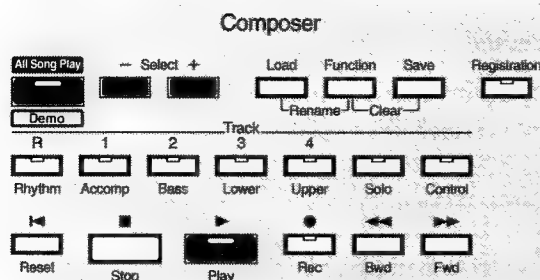
4. Play each keyboard to hear the sounds.

The AT-90 has two manual keyboards and one pedal board, as shown below.



Listen to the demo songs

The AT-90 contains demo songs. Here's how to play to the demo songs to hear the sounds, rhythms, and automatic accompaniment provided by the AT-90.



1. Make sure that a floppy disk is not inserted in the disk drive.
2. Press the Demo button to make the indicator light.
3. Use the Select buttons to select a demo song.

4. Press the Play button.

The selected demo song will playback.

5. To halt playback in the middle of the song, press the Stop button (or the Demo button or the Reset button).

When playback ends or is halted, the basic display will reappear.

- * If the performance data in the unit has not been saved to disk, the following message will appear, and it will not be possible to play the demo songs.

Clear Song Sure?
Yes: REC No: RST

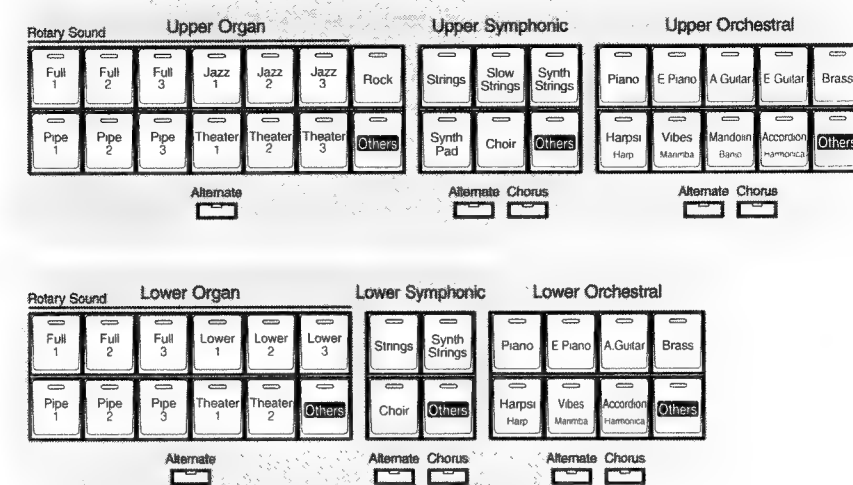
If you don't mind erasing it, press the Rec button. If you wish to save this data, however, press the Reset button to cancel the procedure, and then save the data on disk. (→p.43)

Selecting voices

The AT-90 is able to produce the sounds of various instruments. These sounds are called "voices." It is very easy to select voices.

● Upper and lower

Immediately after the power is turned on, the upper keyboard will play Full Organ 1. Here's how you can change the voice.



1. Press the Upper Organ Full 2 button (indicator lights).

The name of the selected voice will appear in the display for several seconds.

```
U.Organ Voice
Full Organ2
```

Now when you play the upper keyboard, Full Organ 2 will sound.

2. Press the Alternate button, and the indicator will light.

When you play the upper keyboard, Full Organ 5 will sound.

Two similar voices are assigned to each voice button. (For buttons to which two different types (families) of voice are assigned, the names of both voices are printed on them.)

The Alternate button switches between these two voices.

3. Press the Upper Organ Full 2 button (the indicator is turned off).

Playing the upper keyboard now will no longer produce sound.

Each time you press the voice button, the indicator will alternate between being lit and being turned off, and voices whose button indicator is lit can be played.

4. Press the Upper Organ Full 1 button and the Upper Symphonic Strings button (their indicators will light).

Now when you play the upper keyboard, the two voices Full Organ 4 and Strings 1 will sound simultaneously.

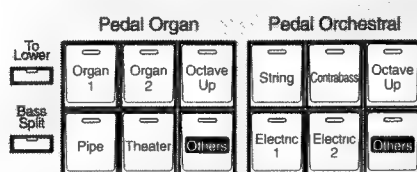
-
5. Press the Upper Orchestral Piano button (indicator lights).

When you play the upper keyboard, Piano 1 will be added, producing three simultaneous voices.

The upper and lower keyboards each have three parts; Organ, Symphonic, and Orchestral. One voice can be selected from each part, allowing you to layer (mix) up to 3 voices. Voices can be selected for the lower keyboard in the same way as for the upper keyboard.

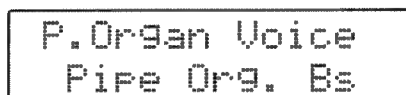
● Pedal Bass

Immediately after the power is turned on, the pedal bass voice will sound single notes using the Organ Bass 1 voice. Here's how to select the bass voice sounded by the pedal board.



1. Press the Pedal Organ Pipe button (indicator lights).

The name of the selected voice will appear in the display for several seconds.



Now when you play the pedal board, Pipe Org. Bs will sound.

2. Press the Octave Up button (indicator lights).

Play the pedal bass again. Notice that when the Octave Up button is on, the selected bass voice will sound an octave higher.

3. Press the Pedal Orchestral Electric 1 button (indicator lights).

Now when you play the pedal board, the two voices Pipe Org. Bs and E. Bass 1 will sound simultaneously.

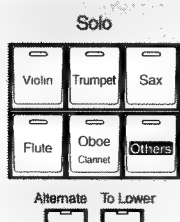
The bass voice is selected in the same way as for the upper and lower keyboards. Each time you press a voice button, the indicator will alternate between being lit and being tuned off, allowing you to play the voice for which the indicator is lit.

If all indicators are turned off (not lit), the bass voice will not sound.

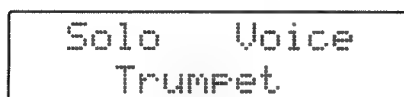
- * If you press the To Lower button (indicator lights →p.33) or Bass Split button (indicator lights →p.33), the bass voice will be played by the lower keyboard, not by the pedal board.
- * Settings can be made to allow multiple notes to be played on the Bass voice. (→p.52)

● Solo

The solo voice normally sounds for the highest note played on the upper keyboard. Let's try selecting a solo voice.



1. Press the Solo Trumpet button (indicator lights).
The name of the selected voice will appear in the display for a few seconds.



Play the upper keyboard, and the highest note will be sounded by the Trumpet voice.

2. Press the Alternate button (indicator lights).
Play the upper keyboard, and the highest note will now be sounded by the Mute Trumpet voice.

In the same way as for the upper and lower sections, two voices of the same category are assigned to each of the Solo buttons. (For buttons to which two different types (families) of voice are assigned, the names of both voices are printed on them.)

Use the Alternate button to switch between these two voices.

The solo voice is selected in the same way as for the upper and lower keyboards. Each time you press a voice button, the indicator will alternate between being lit and being turned off, allowing you to play the voice for which the indicator is lit.

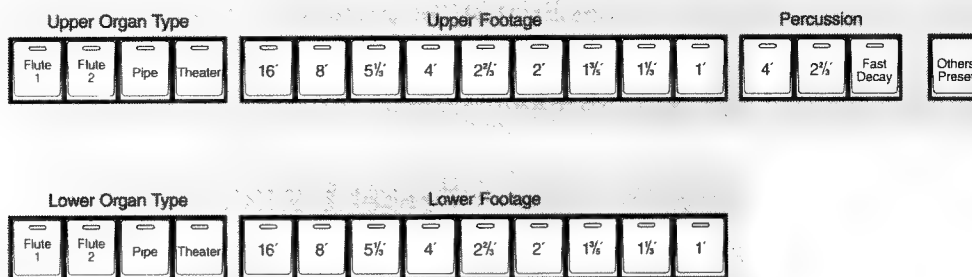
If all indicators are turned off (not lit), the solo voice will not sound.

- * If you press the To Lower button (indicator lights), the solo voice will be played by the lower keyboard. (→p.33)

Footage Tablets

Upper and Lower provide Footage Tablets that allow you to create a wide variety of sounds by combining voices of different pitches. Here's how to use the Footage Tablets to create a voice, so that you can play sounds that are not provided by the three Parts discussed earlier.

So that you can easily hear the characteristics of the Footage Tablets, turn off the voices of the three (four) parts "Organ," "Symphonic" and "Orchestral" (& Solo).



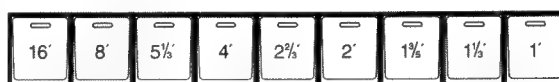
1. Press the Flute 1 button in the Upper Organ Type section to make the indicator light.

There are a total of four types of voices.

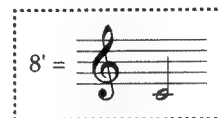
Each time you press the button, the indicator will alternate between lit(on) and dark(off).

2. Press the Upper Footage button to make the indicator light.

There are a total of 9 pitches. With 8' as the standard pitch, the pitch will be lower for larger numbers and higher for smaller numbers. The numbers on each button are related to the pitch as follows.



one octave
below root 5th 8th 12th 15th 17th 19th 22nd



Try combining various pitches and play the upper keyboard.

Each time you press a button, it will alternate between lit(on)/dark(off).

Various pitches can be combined for the Lower in the same way as for the Upper.

Adding an attack to the voice

You can add a percussive attack to create a more well-defined sound.

1. Press the 4' button for Percussion to make the indicator light.

Play the upper keyboard and notice that an attack has been added. There are two percussive sounds available, 4' and 2-2/3'.

2. Press the Fast Decay button in the Percussion section to make the indicator light.

When the indicator is lit, the percussive sound will decay more quickly.

- * The Percussion buttons are available only when the voice is selected in the Upper Organ Type section.

● Using the Others Preset button

When you wish to layer a voice created using the Footage Tablets with an Upper or Lower voice, using the Others Preset button allows you to set the Lower and Upper Others buttons to the voices most appropriate for combination with the Footage Tablet voice.



- ✧ When any of the four Upper Organ Type or Lower Organ Type voice is selected, press the Others Preset button to the right of the footage tablets.

Two voices appropriate for the Upper Organ Type voice will be assigned to each of the three Others buttons in the Upper section, and two voices appropriate for the Lower Organ Type voice will be assigned to each of the lower Others buttons in the Lower section.

To switch between the two voices of each button, use the Alternate button.

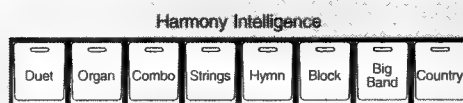
To layer voices, press the corresponding Others button to make the indicator light.

Adding variety to a voice

The AT-90 allows you to add a variety of effects to voices, and to use various playing techniques to make your performance more expressive. Here are some of the most frequently used effects and functions.

● Adding harmony to a melody (Harmony Intelligence button)

Harmony Intelligence is a function that adds harmony to the highest note of the melody being played in the Upper keyboard, according to the chords being played in the Lower keyboard.



- ◇ Press one of the Harmony Intelligence buttons to make the indicator light.

There are 8 types of harmony.

Each time you press a button, the indicator will alternate between lit (on) and dark (off).

When you press a button, the voice most appropriate for the selected type will be automatically selected. The selected type will also affect how the notes are sounded.

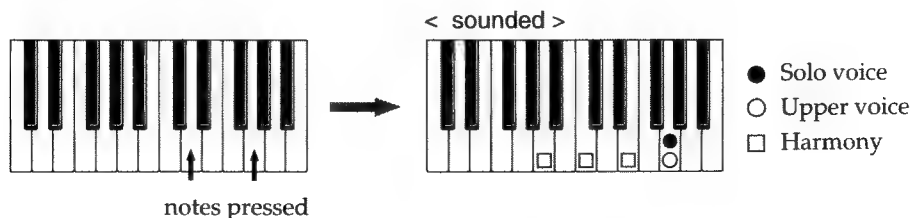
Type	How sounded
Duet	Solo
Organ	Upper
Combo	Solo
Strings	Solo & Upper
Hymn	Solo & Upper
Block	Solo & Upper
Big Band	Solo
Country	Solo & Upper

- * You may change the Solo voice and Upper voice to your own desired voice.

How notes are sounded

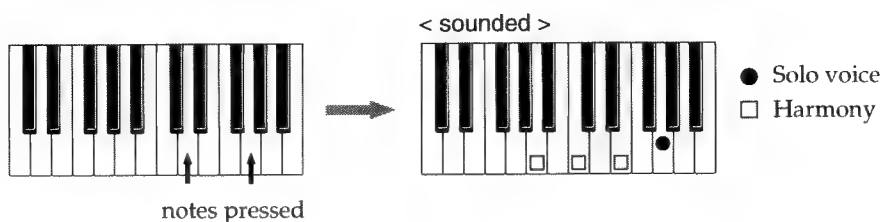
Solo & Upper

The highest note will be sounded by the Solo voice and the Upper voice, and the harmony will be sounded by the Upper voice.



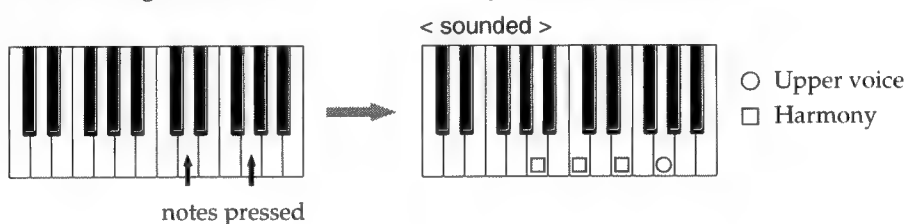
Solo

The highest note will be sounded by the Solo voice, and the harmony will be sounded by the Upper voice.



Upper

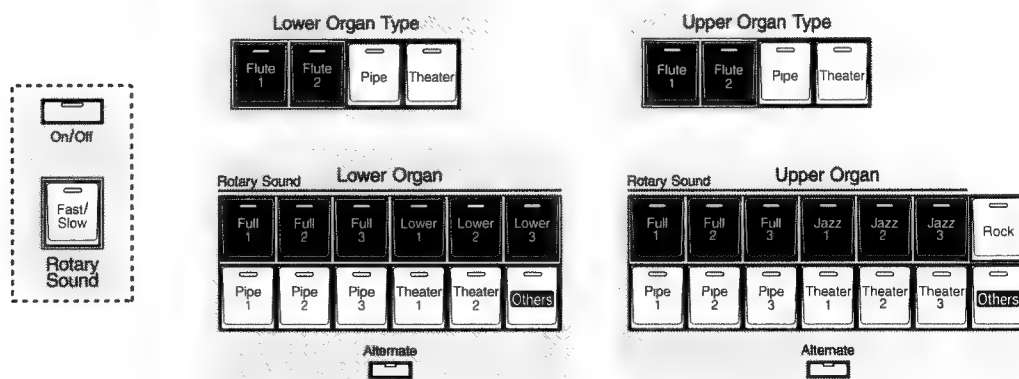
Both the highest note and the harmony will be sounded by the Upper voice.



● Rotary Effect

Rotary is an effect which simulates the sound you hear when speakers are rotated. There are two settings; Fast and Slow.

Rotary is effective only for the Voices assigned to the upper row of buttons for Upper Organ and Lower Organ(except Rock Organ), Flute 1 and Flute 2 of Upper Organ Type and Lower Organ Type.



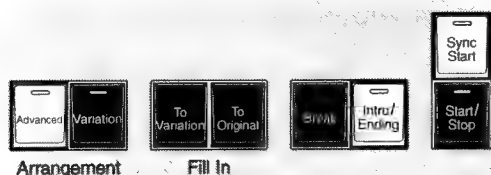
1. Select the Voice to which you want to apply the rotary effect.
2. Press the Rotary Sound On/Off button (confirm that its indicator is lit).
3. Press the Rotary Sound Fast/Slow button.

Lit → Fast : The effect obtained is equivalent to speakers being rapidly rotated.
 Turned off → Slow : Effect simulating the slow rotation of speakers.

- * The Rotary effect can be used for voices 1–12, 15–20, 33, and 38–40 (→p.28), including the voices that are assigned to the upper row of the Upper Organ(except Rock Organ) and Lower Organ buttons. It can also be used when these voices have been assigned to the Others buttons(except the Others buttons for Solo, Pedal Organ and pedal Orchestral). (Other buttons → p.27)
- * You can also finely adjust the speed of the speaker's rotation, and alter the brightness of the sound obtained when rotary is applied.(→p.50)

Use the rhythm functions

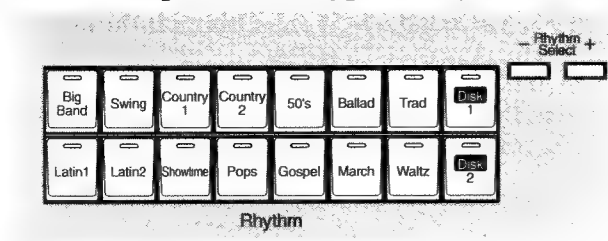
The AT-90 lets you enjoy playing along with a rhythmic accompaniment. Use the following procedure to add a rhythmic accompaniment.



1. Press the Start/Stop button (indicator lights).
The rhythm will begin playing.
 2. Press the Variation button.
Two types are provided for each rhythm.
Lit → Variation : a variant rhythm pattern
Turned off → Original : the basic rhythm pattern
 3. Press the To Original button.
After a fill-in is played, the rhythm will change to the Original pattern. A fill-in is a phrase that is inserted between breaks in the melody or in locations where the mood of a song changes.
 4. Press the To Variation button.
The Variation button indicator will light, and after a fill-in is played, the rhythm will change to the Variation pattern.
Since the To Original and To Variation buttons change the rhythm pattern after playing a fill-in, it is effective to use them in locations where the mood of the song changes.
 5. Press the Break button.
The rhythm will stop for one measure.
 6. To stop the rhythm, press the Start/Stop button (the indicator is turned off).
By making effective use of the Variation, To Variation, To Original, and Break buttons in this way, you can play along to a varied and interesting rhythmic accompaniment.
- * It is often convenient to press the Sync Start button (indicator is lit), so that the rhythm will begin at the instant you play the lower keyboard. (→p.36)

Selecting a rhythm

The AT-90 provides 53 types of rhythm. These are organized into 14 groups.



- 1. Press a rhythm button.
The indicator will light, and the rhythm will be selected.
- 2. To select a different rhythm within the same group, press the Rhythm Select buttons.

The indicator will blink.



- 3. Press the rhythm button once again (indicator lights constantly).
The rhythm has been selected. Now press the Start/Stop button to play the rhythm.
Rhythms are organized as follows.

Big Band	Swing	Country 1	Country 2	50's	Ballad	Trad
1 Jazz Band	1 Combo	1 Cntry Ballad	1 Hoe Down	1 Slow Dance	1 Love Songs	1 Foxtrot
2 Big Band	2 MediumSwing	2 CountrySwing	2 New Country	2 50's	2 Ballad	2 Dixieland
3 BigBndBallad	3 Shuffle	3 Bluegrass	3 Two Step	3 Rock'n'Roll1	3 Classic	3 Charleston
4 Boogie	4 Swing	4 CountryWaltz		4 Rock'n'Roll2		
5 Standard						

Latin 1	Latin 2	Showtime	Pops	Gospel	March	Waltz
1 Bossa Nova	1 Samba	1 Music Hall	1 Easy Listen1	1 Gospel	1 March 4/4	1 Slow Waltz
2 Fast Bossa	2 Rhumba	2 Broadway	2 Easy Listen2	2 Revival	2 March 6/8	2 Slow Waltz 2
3 Chacha	3 Beguine	3 Bubbles	3 PopularPiano	3 Anthem		3 Musette
4 Mambo	4 Tango		4 Pop	4 GospelBallad		4 Vienna Waltz

Disk 1

1 Hawaiian

Disk 2

1 Polka

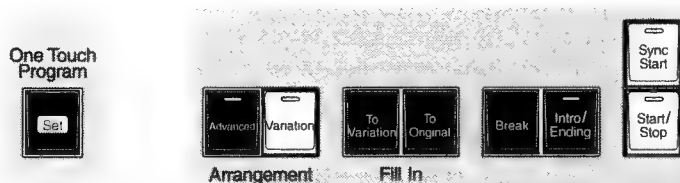
Try the automatic accompaniment (One Touch Program button)

The Arranger function of the AT-90 can add an automatic accompaniment to the rhythm. Based on the selected rhythm, the Arranger function automatically adds an accompaniment that is suitable for the chord being pressed in the lower keyboard.

The AT-90 provides a very convenient One Touch Program button. By simply pressing this button once, you will be ready to add an automatic accompaniment that is most appropriate for the currently selected rhythm.

- * If a rhythm from a music style disk is selected, pressing the One Touch Program button will not select the most appropriate Voice.

Here's how you can select a rhythm and add an automatic accompaniment.



1. Select a rhythm. (→p.24)
2. Press the One Touch Program button.
3. In the lower keyboard, simultaneously press the C/E/G keys (C Major chord).
When you press the chord, the accompaniment will begin automatically from the introduction. The accompaniment will continue even if you take your hand off the keyboard. The display will show the name of the chord that you played.

Jazz Band
J:124 C Maj

4. Next play an F chord (F/A/C keys) in the lower keyboard.
The accompaniment will change appropriately for the chord you played. Try various other chords.
5. Press the To Variation button.
In the same way as for rhythm play, after a fill-in, the accompaniment will change to a Variation type.
6. Press the To Original button.
The Variation button indicator will be turned off, and after a fill-in, the accompaniment will return to the Original type.
7. Press the Advanced button.
The arrangement of the automatic accompaniment can be switched not only using the Variation button, but also using the Advanced button.
Lit → Advanced : a more complex arrangement with more instruments
Turned off → Basic : a simple arrangement with fewer instruments
8. Press the Break button.
The rhythm and automatic accompaniment will stop for one measure.
9. Press the Intro/Ending button.
After the Ending is played, the accompaniment will stop automatically.

In the above ways, you can use the AT-90 for even more musical enjoyment by simply playing a chord in the lower keyboard, and using the To Variation, To Original, Variation, Advanced, Break, and Intro/Ending buttons.

- * While the Intro or Ending is being played, playing the lower keyboard will not produce sound (play voices).

Changing all the AT-90 settings at once (Registration)

The AT-90 has a "Registration" function that allows you to record panel settings and recall those settings with a single press of a button.

It is convenient to use this function when you wish to make many changes in panel settings as you play, or when you wish to reproduce a complex panel setting at a later time. Up to 12 panel settings can be recorded.

● Storing Registrations



1. Make all the panel settings that you wish to have stored.
 2. While holding down the Write button, press a button from 1 to 12.
- * Stored settings will be retained in memory even after the main power is turned off.
 - * Sets of Registrations can be saved onto floppy disk. The complete group of settings stored for buttons 1–12, considered as one set, can be stored on a disk. (→p.46)

● How to call up settings

To call up settings for everything other than rhythm performances and automatic accompaniment:

- ◇ Press a button from 1 to 12.

The indicator lights, and the settings for everything (other than a rhythm performances and automatic accompaniment) are instantly recalled.

To call up settings that include data about rhythm performances and automatic accompaniment:

- ◇ Continue holding a button for several seconds from 1 to 12 until the buttons related to rhythm performances and automatic accompaniment flash.
- * It is possible to shorten the time required for recalling settings that include those related to rhythm and automatic accompaniment play. (→p.53)

● How to use the Manual button

When the Manual button is ON (lit), all panel settings you make will be stored automatically as they are made, thus updating the Registration that had been previously saved.

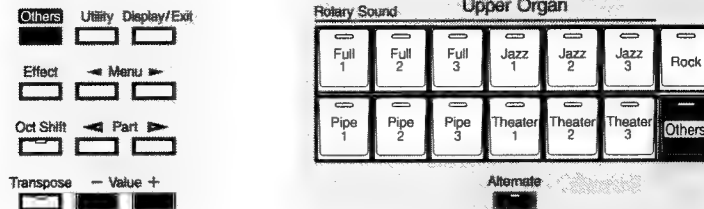


More advanced applications

Using the Others buttons

There is an Others button for each of the 9 voice parts. You can assign two desired voices (one voice only for the pedal organ and pedal orchestral) to each of these buttons. By assigning various voices to these, you will be able to play a larger number of voices. For the upper and lower, you can also layer (mix) an additional 3 parts of voices to create new sounds.

- * You cannot assign a pair of the same Voice to them.



1. Press the Others button to the left of the display (all Others buttons and Alternate buttons begin to flash).
2. Press the Others button for the Part to which you wish to assign a Voice (only the Others button selected will flash).
3. Press the Alternate button as necessary.
(This step is unnecessary in the case of Pedal Bass.)
4. Use the Value buttons (-/+) to select the desired Voice.
The name of the selected Voice is shown in the display.

```
Others  Select
35 Theater Or.7
```

5. Once again, press the Others button to the left of the display, or an Others button for a Part to be assigned with the Voice selected.
- * After pressing the Others button for the part that you wish to set, you will still be able to assign a voice to the Others button if you press the Value buttons when the voice name is shown in the display.

Voices which can be assigned to an Others button are as follows. However, you cannot assign Voices that are already assigned to each Part.

1	Full Organ1	35b	VoxHumana8'	64	Overdrive Gt	102	Clarinet
2	Full Organ4	35c	T.Tuba 8'	65	Tp. Section	102a	Clarinet2
3	Full Organ2	35d	T.Trumpet8'	66	Sax. Section	103	Viola
4	Full Organ5	35e	T.Sax 8'	67	Harpsichord	104	Flugel Horn
5	Full Organ3	35f	T.Oboe 8'	68	Harp	105	Trombone
6	Full Organ6	35g	T.Krumet 8'	68a	Koto	106	Soprano Sax
7	Jazz Organ1	35h	Eng.Horn 8'	68b	Taisho Koto	107	Bassoon
8	Jazz Organ4	36	Synth. Org.1	69	Vibraphone	108	Shakuhachi
9	Jazz Organ2	36a	Synth. Org.3	70	Marimba	109	HumanWhistle
10	Jazz Organ5	37	Synth. Org.2	71	Mandolin	110	Synth. Lead1
11	Jazz Organ3	37a	Synth. Org.4	72	Banjo	111	Synth. Lead2
12	Jazz Organ6	38	Pop. Organ1	73	Accordion	112	Synth. Lead3
13	Rock Organ1	39	Pop. Organ2	74	Harmonica	113	Synth. Lead4
14	Rock Organ2	40	Pop. Organ3	75	Org. Attack1	114	Synth. Lead5
15	Lower Organ1	41	Strings1	76	Org. Attack2	115	Organ Bass1
16	Lower Organ4	41a	Strings3	77	Org. Attack3	116	Organ Bass2
17	Lower Organ2	42	Strings2	78	Org. Attack4	117	Pipe Org. Bs
18	Lower Organ5	42a	Strings4	79	Org. Click	117a	Theater Bass
19	Lower Organ3	43	Slow Str.1	80	Piano2	118	String Bass
20	Lower Organ6	44	Slow Str.2	81	Clavi.	118a	String Bass2
21	Pipe Organ1	45	Synth. Str.1	82	Celesta	119	E.Bass1
21a	FluteCeleste	46	Synth. Str.2	83	Glockenspiel	119a	E.Bass3
22	Pipe Organ4	47	Synth. Pad1	84	Xylophone	120	E.Bass2
23	Pipe Organ2	48	Synth. Pad2	85	Tubular-bell	120a	E.Bass4
24	Pipe Organ5	49	Choir	85a	Organ Bell	121	Contrabass1
25	Pipe Organ3	50	Pop Voice	86	Bandoneon	122	Contrabass2
26	Pipe Organ6	51	Synth. Choir	87	Hawaiian Gt.	123	Tuba
27	Theater Or.1	52	Synth. Voice	88	Organ Harp	123a	Tuba2
28	Theater Or.4	53	Space Voice	89	Fr.Horn Sect	124	Synth. Bass1
29	Theater Or.2	54	Synth. Str.3	90	Synth. Brass	125	Synth. Bass2
30	Theater Or.5	55	Synth. Flute	91	Sitar	126	Bass+Cymbal
31	Theater Or.3	56	Pizzicato	91a	Kalimba	126a	Ride Cymbal
32	Theater Or.6	57	Piano1	92	Steel Drums	126b	Crush Cymbal
33	Full Organ7	57a	Piano3	93	Violin	126c	Tambourine
34	Pipe Organ7	58	Honky-tonk	94	Cello	126d	Woodblock
34a	Gemshorn 8'	59	E.Piano1	95	Trumpet	126e	Jingle Bell
34b	Trompet 8'	60	E.Piano2	96	Mute Trumpet	126f	Snare Drum
34c	Hautbois 8'	61	Nylon-str.Gt	97	Alto Sax	126g	Bass Drum
34d	Viola 8'	62	Steel-str.Gt	98	Tenor Sax	127	Perc. Set1
34e	ViolaCeleste	63	Jazz Guitar	99	Flute	127a	Timpani
35	Theater Or.7	63a	Clean Guitar	100	Pan Flute	128	Perc. Set2
35a	T.String 8'	63b	JC E.Guitar	101	Oboe	128a	Perc. Set3

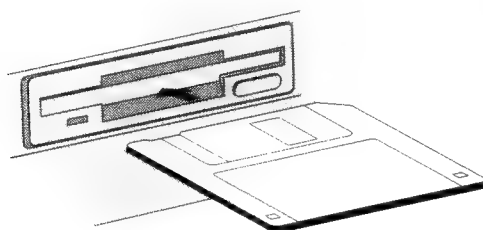
Use a rhythm from disk

The AT-90 contains 53 types of built-in rhythms, and additional rhythms are provided on the music style disk included. Here's how to select a rhythm from disk.



1. Insert the music style disk into the disk drive.

Be sure that you insert the disk in the correct direction with the label facing upwards.



2. Press the Disk 1 or Disk 2 button (indicator lights).
3. Press a Rhythm Select button to select a rhythm.

Polka
1:130

While the rhythm is being read into memory, the Disk button indicator will blink. (A short time will be required for the rhythm to be read.)

When reading has been completed, the Disk button indicator will light, and the selected rhythm will be available to play. Then follow the usual procedure (→p.23, 25) to play the rhythm or automatic accompaniment.

- * Immediately after the power is turned on, even if the included disk is not inserted in the disk drive, you can press the Disk 1 button to play the same rhythm as Hawaiian on the included disk, or the Disk 2 button to play the same rhythm as Polka on the included disk. (Refer to the separate sheet.)
- * If a large amount of music data exists in the internal memory, the following message will appear, and it will not be possible to transfer rhythm data from disk.

Clear Song Sure?
Yes:REC No:RST

If it is ok to erase the music data in memory, press the Rec button. If you do not wish to erase the data, press the Reset button to cancel the operation, and save the data to disk. (→p.43)

- * While recording, it will not be possible to transfer rhythm data from disk.

Use the keyboard to play the drums

● Playing drums from the entire Lower part (Manual Drums button)

You can use the lower keyboard to play various drum sounds (the drum set). In this case, the lower voice will no longer sound.



- ✧ Press the Manual Drums button (indicator lights).

Play the lower keyboard and listen to the various drum sounds.

- * Immediately after the power is turned on, the STANDARD drum set will sound, but you can also play other drum sets, or even sound effects. (→p.53)
- * Refer to “Drum set list” (→p.64) for details on which drum sound or sound effect will be played by each note.
- * It is not possible to simultaneously select both Manual Drums and Manual Perc.

● Playing drums together with the Lower part (Manual Perc button)

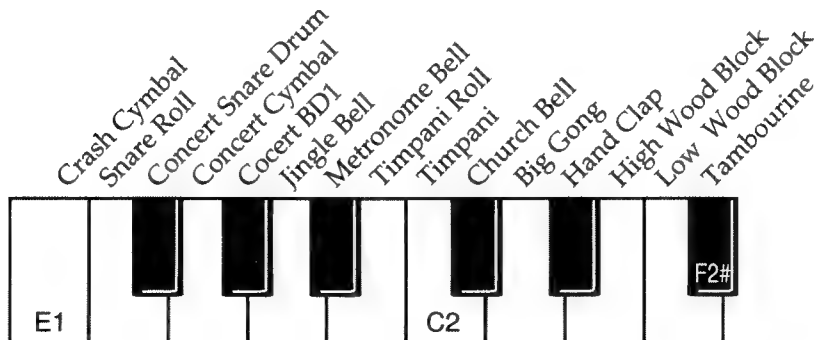
You can play various drum sounds and sounds effects using the bottom 15 keys of the Lower keyboard. This is convenient when you wish to play the Lower voice as well as use drum sounds or sound effects.



- ✧ Press the Manual Perc button to make the indicator light.

The button will alternate between lit (on) and dark (off) each time it is pressed.

Each note will play the following drum sounds or sound effects.



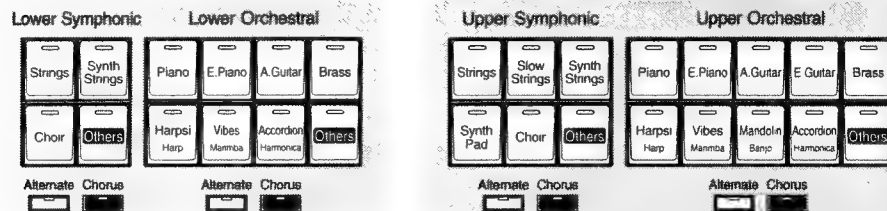
- * It is not possible to simultaneously select both Manual Drums and Manual Perc.

Add various effects to a voice

On the AT-90, a variety of effects (in addition to the rotary effect) can be added to a voice.

● Chorus effect

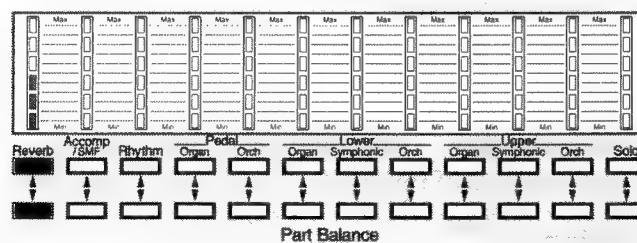
Chorus is an effect that adds expansiveness to a sound, making one instrument sound like several. The Chorus effect can be used on four Parts: Upper Symphonic, Upper Orchestral, Lower Symphonic and Lower Orchestral. (There is a Chorus button for each Part.) Additionally, you can set chorus to be ON/OFF for each Voice.



1. Select the Voice you wish to add chorus to.
 2. Press the Chorus button that corresponds to the Part of the selected Voice. (Confirm that the indicator lights.)
- * Chorus will not apply to voices no. 1–12, 15–20, 33 and 38–40 (→ p.28), or to Flute 1 and Flute 2 of Upper Organ Type and Lower Organ Type.
 - * These settings remain stored in memory even while the power is off.

● Reverb effect

Reverb is an effect that adds a sense of spaciousness to the sound, creating the sonic illusion of playing in a large concert hall.



- ◇ Press the Reverb buttons to adjust the reverb level.

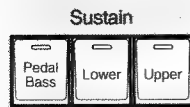
When you press the upper button (▲), more reverb is applied. Pressing the lower button (▼) decreases the reverb level.

If all indicators are dark, no reverb will be applied.

- * You can also select the type of reverb you wish and the level (amount) for each Part. (→ p.49, 50)

● Sustain effect

Sustain allows you to have Voices sustained (held). The sustain effect can be obtained for the Upper (except the Solo Voice), Lower, and Pedal Bass Voices.



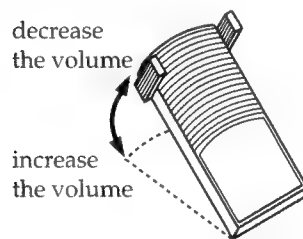
- ✧ Press the Sustain button for the keyboard to which you wish to apply Sustain (indicator lights).
- * The length of sustain can be modified independently for each keyboard. (→p.50)

Try out the performance functions

Here's how to use the performance functions other than Harmony Intelligence.

● Adjusting overall volume using the Expression pedal

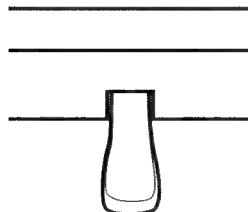
When you depress the expression pedal, the volume increases. the volume is lowered as you close the pedal.



- * This cannot be used to control the playback of musical data that was not created by the AT-90 (only when playing back directly from disk).
- * You can adjust the amount of effect that is produced when the pedal is pressed. (→p.53)

● Adding decay to the sound (Damper or Sustain pedal)

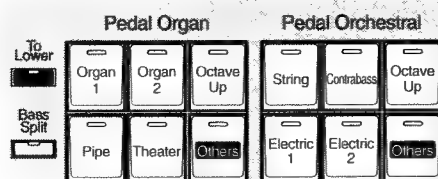
- ✧ When you depress the pedal, the damper effect is applied to the Voice played on the Lower keyboard.



- * If the To Lower and Bass Split indicators are lit, no decay will be added to the Solo voice and Bass voice played on the Lower keyboard. (→p.33)

● Using Lower to play the Bass voice <1> (To Lower button)

You can use the lower keyboard to play the bass voice.



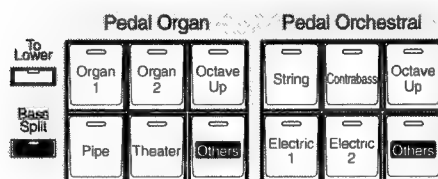
◇ In the Bass Part, press the To Lower button to make the indicator light.

When you play C/E/G on the lower keyboard, the C will also sound the bass voice. In this way, the bass voice will be sounded by the root note of the chord you play on the lower keyboard.

- * If there is no Lower area in which the Lower voice sounds (e.g., if Solo To Lower is ON and the Solo Split Point is set to E1, etc.), the Bass voice will not sound.
- * It is not possible to simultaneously select both To Lower and Bass Split.

● Using Lower to play the Bass voice <2> (Bass Split button)

This allows you to play the Bass voice in the area including and to the left of Lower C3 (this note is referred to as the Bass Split Point).

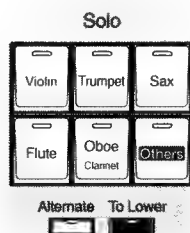


◇ Press the Bass Split button to make the indicator light.

- * You can change the Bass Split Point. (→p.53)
- * It is not possible to simultaneously select both To Lower and Bass Split.

● Play the Solo voice in the Lower keyboard (To Lower button)

This allows you to play the Solo voice in the area including and to the right of Lower B4 (this note is referred to as the Solo Split Point).



◇ In the Solo Part, press the To Lower button to make the indicator light.

- * You can change the Solo Split Point. (→p.53)

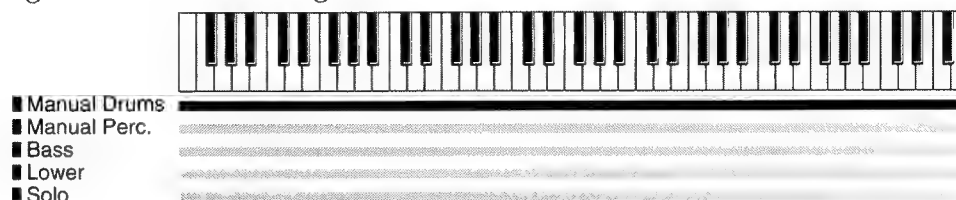
● Effective ways to use the Lower keyboard

The Lower keyboard allows you to play Drums (Manual Drums, Manual Perc→p.30), the Bass voice (Bass Split→p.33), and the Solo voice (Solo To Lower→p.33) in various ways, but these can be combined for even more variety.

However the keyboard range of each voice will be as follows.

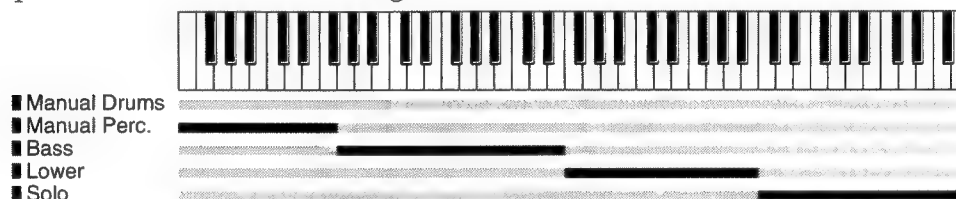
When Manual Drums is ON

The entire keyboard will play Manual Drums, and the other voices will not sound regardless of their settings.



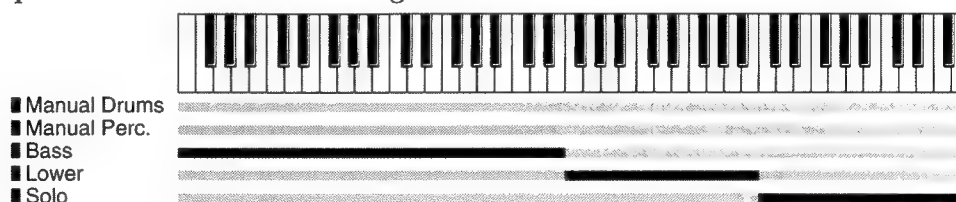
When Manual Drums is OFF and Manual Perc is ON

Manual Percussion will be played only by the lowest 15 notes (E1-F2#). The rest of the keyboard area will play the Bass/Lower/Solo voices as assigned by the Bass Split and Solo To Lower settings.



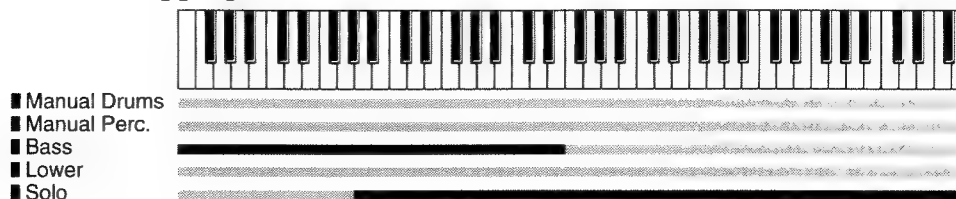
When Manual Drums and Manual Perc are both OFF

The entire keyboard will play the Bass/Lower/Solo voices as assigned by the Bass Split and Solo To Lower settings.



When Bass and Solo areas overlap

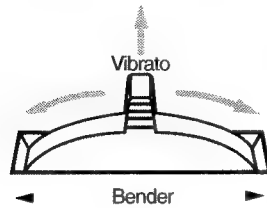
Depending on the settings of the Bass Split Point and the Solo Split Point, the bass and solo areas may overlap. In this case, both the Bass and the Solo voice will sound in the overlapping area, and there will be no area in which the Lower voice sounds.



● Pitch Bend and Vibrato Effects

When you move the pitch bend/vibrato lever to the left or right, you can obtain a smooth transition in the pitch of notes played (pitch bend effect). Push the lever to the right to raise the pitch, and to the left to lower it.

Also, when you push the lever away from you, a vibrato effect can be obtained.

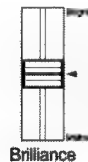


- * As a default setting (immediately after the power is turned on) the effect is added to what sound is played on the Upper keyboard.
- * Please note that not all of the Voices will allow vibrato to be added.
- * You can change the settings so that the effect is also applied to the Lower or pedal keyboards, if you wish. (→p.52)
- * You can also specify a different value for the maximum amount of change in the pitch that can be obtained. (→p.52)

● Adjusting the brightness of the sound (Brilliance)

- ◇ Use the Brilliance slider to make adjustments.

When you push the slider away from you, the sound becomes brighter, and pull the slider toward you, the sound becomes mellower.

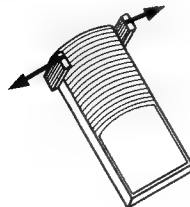


● Using the foot switches

The instrument provides two foot switches, one on each side of the expression pedal.

When you push the left switch with your foot, a 'glide' is heard (pitch is momentarily lowered), and when the switch is released, the pitch will return to what it was originally. You can also switch between Fast/Slow for the Rotary effect by pushing the switch on the right with your foot.

When the power is turned on, the Glide effect will apply to the sound being played by the upper keyboard.

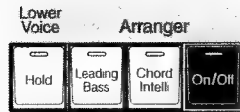


- * You can also change the functions assigned to the left and right switches (→p.52)
- * The Glide effect will be obtained from only the keyboard section which has been specified as being the destination for the Pitch bend/Vibrato lever. (→p.52)

Rhythm play and automatic accompaniment settings

● Switching Automatic Accompaniment On/Off (Arranger On/Off button)

This setting allows you to choose (by switching the Arranger On/Off) whether or not you wish to add automatic accompaniment to a Rhythm performance.



- ✧ Press the Arranger On/Off button (indicator lights).

Lit → ON : Rhythm performance + automatic accompaniment

Turned off → OFF : Rhythm performance only

- * When the Arranger On/Off button is on, the bass will be played by the automatic accompaniment if a bass voice is not selected.

● Using the Sync Start function (Sync Start button)

Sync Start is a function that makes the rhythm and automatic accompaniment begin at the moment that you play the lower keyboard.



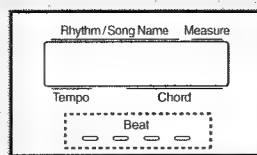
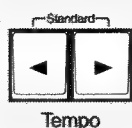
- ✧ Press the Sync Start button (confirm that its indicator is lit).

Play the lower keyboard.

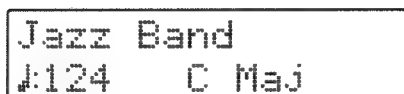
If the Arranger On/Off button is on, the rhythm and automatic accompaniment will begin to play.

If the Arranger On/Off button is off, only the rhythm will sound.

● Changing the Tempo (Tempo button)



- ◇ Press the Tempo buttons to adjust the tempo of the rhythm or automatic accompaniment.
The tempo becomes faster when you press the [▶] Tempo button, and becomes slower when you press [◀].
The current Tempo value (30–250 beats per minute) can be checked in the display.



You can also check the tempo by viewing the beat indicator. The indicator flashes red on the first beat, and green on the remaining beats.

- * By pressing the [◀] and [▶] Tempo buttons simultaneously, the tempo is returned to the standard (preset) tempo for the selected Rhythm.

● Inserting an Intro (Intro/Ending button)



- ◇ Press the Intro/Ending button.
When Sync Start is turned ON, the button will begin flashing (indicating it is in standby mode). Then play a chord on the Lower keyboard, an Intro of the selected rhythm/automatic accompaniment will be played and then continues into the rhythm/automatic accompaniment.
When Sync Start is OFF, the Intro is played immediately then the rhythm/automatic accompaniment starts.
- * If the Arranger On/Off button is OFF, only the rhythm will begin to play.
- * While an Intro is playing as part of a rhythm performance to which automatic accompaniment has been added, no voices will be heard if you try playing the Lower keyboard.

● Inserting an Ending (Intro/Ending button)

- ◇ Press the Intro/Ending button while a rhythm/automatic accompaniment (or only a rhythm) is playing.
An Ending phrase will be inserted after the current measure is complete and play will then stop automatically.
- * While an Ending is playing as part of a rhythm performance to which automatic accompaniment has been added, no voice will be heard if you try playing the Lower keyboard.

● Using easy fingering to play chords (Chord Intelli button)

On the Lower keyboard, you can play six representative chords using simpler fingering.



◇ Press the Chord Intelli button (confirm that its indicator is lit).

The types of chords that can be used with the Chord Intelligence function, and the notes that should be used, are as follows.

Chord Intelligence : ON

Maj	Maj 7	7th	Min	Min 7	dim
C	B/C	B \flat /C	C/E \flat	B \flat /C/E \flat	C/F#
C#	C/C#	B/C#	C#/E	B/C#/E	C#/G
D	C#/D	C/D	D/F	C/D/F	D/A \flat
E \flat	D/E \flat	C#/E \flat	E \flat /F#	C#/E \flat /F#	E \flat /A
E	E \flat /E	D/E	E/G	D/E/G	E/B \flat
F	E/F	E \flat /F	F/A \flat	E \flat /F/A \flat	F/B
F#	F/F#	E/F#	F#/A	E/F#/A	F#/C
G	F#/G	F/G	G/B \flat	F/G/B \flat	G/C#
A \flat	G/A \flat	F#/A \flat	A \flat /B	F#/A \flat /B	A \flat /D
A	A \flat /A	G/A	A/C	G/A/C	A/E \flat
B \flat	A/B \flat	A \flat /B \flat	B \flat /C#	A \flat /B \flat /C#	B \flat /E
B	B \flat /B	A/B	B/D	A/B/D	B/F

● Leading Bass function (Leading Bass button)

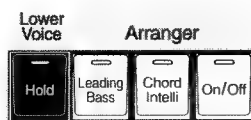
When automatic accompaniment is used, and when the To Lower switch for the Pedal Bass Part is ON, the root of the chord you play at the Lower keyboard is normally sounded as the bass. But when the Leading Bass function is used, the lowest of the notes you actually press at the Lower keyboard is sounded as the bass. This allows the bass to be a note other than the chord root, so that the bass note will change appropriately when inverted chords are used.



◇ Press the Leading Bass button (confirm that the indicator is lit).

● Sustaining notes played on the Lower keyboard (Lower Voice Hold button)

When Lower Voice Hold is ON, the note(s) played on the Lower keyboard will continue to sound until you play the next note(s) — even if you release the keys you have played.



- ◇ Press the Lower Voice Hold button (confirm that the indicator is lit).

Recalling panel settings appropriate for a rhythm

For each of the rhythms built into the AT-90, there are four types of panel settings appropriate for use with that rhythm, and these can be recalled to registration buttons 1–4.

- * If this is done, the registrations that were previously in registration buttons 1–4 will be lost. If you wish to keep them, use the procedure explained on p.46 to save them to floppy disk.



1. Select a rhythm. (→p.24)
2. While holding the registration Write button, press the One Touch Program button.
To use the panel settings that were recalled, press one of the buttons 1–4. (→p.26)

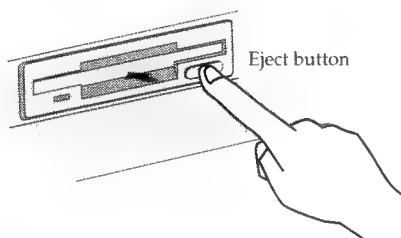
Recording/Playing Back Performances

About Floppy Disks

● Handling the Disk Drive

Avoid using the unit in areas of high humidity (eg., condensation). High levels of humidity can adversely affect the operation of the drive and/or damage floppy disks. When the unit has been transported, allow it to warm to room temperature before operating.

To insert a disk, push it gently but firmly into the drive — it will click into place. To remove a disk, press the EJECT button firmly. Do not use excessive force to remove a disk which is lodged in the drive.



Never attempt to remove a floppy disk from the drive while the drive is operating (the indicator is brightly lit); damage could result to both the disk and the drive.

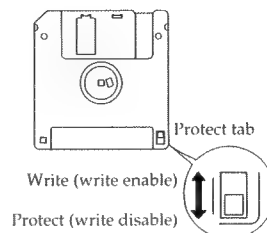
Remove any disk from the drive before powering up or down.

● Handling floppy disks

Floppy disks contain a magnetic storage medium (much like magnetic recording tape). Please observe the following when handling floppy disks:

- Never touch the magnetic medium inside the disk.
- Do not subject floppy disks to temperature extremes (eg., direct sunlight in an enclosed vehicle). Recommended temperature range: 10 to 50°C.
- Do not expose floppy disks to strong magnetic fields, such as those generated by loudspeakers.

Floppy disks contain a 'write protect' tab which can protect the disk from accidental erasure. It is recommended that the tab be kept in the 'PROTECT' position and moved to the 'WRITE' position only when you wish to write new data onto the disk.



All important data should be copied onto back-up disk(s). This provides a complete duplicate of the data should the original disk(s) be lost or damaged.

The identification label should be firmly fixed to the disk. Should the label come loose while the disk is in the drive, it may be difficult to remove the disk.

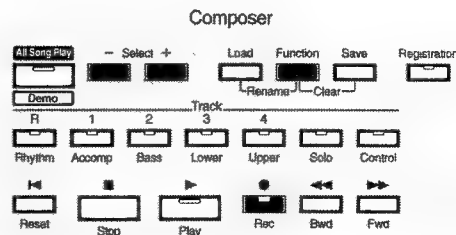
Put the disk back into its case for storage.

Unfortunately, it may be impossible to restore the contents of data stored on disk once it has been corrupted. Roland assumes no liability concerning such loss of data.

● Formatting disks

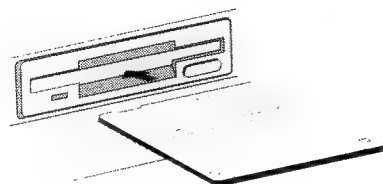
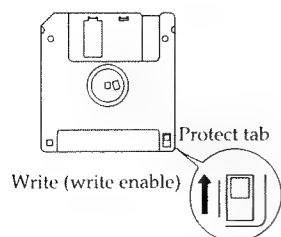
Before any disk (new or used) can be used with the AT-90 it must first be formatted (prepared).

- * Formatting a disk will erase any data that may have been stored on it. Carefully check any previously used disk to be sure it doesn't contain any valuable data.



1. Slide the protect tab on the disk to the "Write" position.

Insert the disk into the disk drive (label side up, shutter facing forward).



2. Press the Function button.
3. Use the Select buttons to select "Disk Utility," and press the Rec button.

```

Disk Utility  ▣
Yes:REC
  
```

4. Use the Select buttons to select "Format Disk," and press the Rec button.

The following message, asking you to confirm, will be displayed.

```

Format Sure?
Yes:REC No:RST
  
```

5. Press the Rec button again to perform the format.

When formatting is completed, the basic screen will reappear.

To cancel the procedure, press the Reset button.

Record and playback your playing

The AT-90's Composer allows you to record (in digital form) what is played on the instrument.

● Recording performances (Rec button)

The Composer provides seven Tracks. You can record a different kind of performance data in each Track:

Rhythm : Rhythm performances, Manual Drums, Sound Effects

Accomp : Automatic accompaniment (except Bass)

Bass : Pedal Bass Voice, Bass part of the automatic accompaniment

Lower : Lower Voice

Upper : Upper Voice

Solo : Solo Voice

Control : Panel operations, Expression Pedal operations

* Manual Percussion cannot be recorded.



1. Select the panel settings needed for recording the performance.

2. Press the Rec button to go into the recording standby mode.

The Rec indicator lights, and the Play indicator begins to flash.

3. Press the button for the Track you wish to use for recording, and confirm that its indicator begins to flash.

When recording a song for the first time, the indicators for all the Tracks automatically start flashing.

If some performance data has already been record into the specified Track (with the exception of the Control Track) that data will be erased as recording takes place.

4. Press the Play button to start recording.

When you press the Play button the metronome will sound two measures of count-in before recording begins.

In the case of Rhythm performances and automatic accompaniment, recording begins at the same moment you start the Rhythm.

5. Press the Stop button after you have completed recording.

The Track indicator for the track just recorded will light constantly.

By pressing the Reset button instead of the Stop button, the unit resets (returns) to the beginning of the data just recorded.

- * If you press the Rec button when disk music data is selected, the selected music data will be loaded into the AT-90, and the AT-90 will be ready to record. If you wish to record a new song, use the Select buttons to first select "NEW SONG" before pressing the Rec button. Alternatively, eject the disk from the disk drive before pressing the Rec button.

```
NEW SONG      :
J:120
```

- * When you press the Intro/Ending button (or Start/Stop button) while recording a Rhythm performance or automatic accompaniment, the Rhythm performance and automatic accompaniment will stop. However, the recording itself will continue. Press the Stop button (or Reset button) to stop recording.
- * In the following instances, a message will be displayed:

When the instrument's memory is nearing capacity.

```
Internal Memory
Near Limit
```

When recording was canceled because the memory limit was reached.

```
Internal Memory
is Full.
```

- * You can also choose to cancel the metronome count-in before recording starts. (→p.54)

● Erasing performance data (Clear)

You will want to erase what was recorded when you are not satisfied with the result, and want to do the recording over again from the beginning, or when you want to make a completely new recording.



1. Press the Function and Save buttons simultaneously.

The following message, asking you to confirm your choice, will be displayed.

```
Clear Song Sure?
Yes:REC No:RST
```

2. If you are sure that you want to erase the song, press the Rec button.

To cancel the procedure, press the Reset button.

● Playing back performance data (Play button)

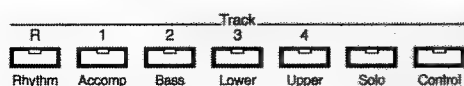


1. Press the Reset button to return to the beginning of the first measure.

When you wish to play performance data from a specific point, use the Bwd and Fwd buttons to select the desired measure.

2. Press the Play button to start playback.
3. To stop playback at any point, press the Stop button (or Reset button).
- * If you press the Play button while holding down the Stop button, the metronome will play two measures of count-in before playback starts.
- * If you load and playback music data other than AT-90 music data (SMF music data, etc.) and then use the rhythm or automatic accompaniment, playback may not be correct (the voices may change, etc.). To playback the data correctly, press the Reset button before playback.

○ Silencing a specific track (Track mute)



- ✧ Press the Track button that is lit and the indicator will go out.

That Track has now been muted and will not be heard if the data is played back. Press the Track button again and that Track will be heard during playback. If all the Track indicators are turned off, no sound at all will be heard during playback.

● Saving performance data (Save button)

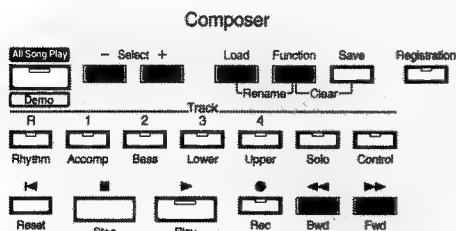
The performance data that you record will be lost the instant you turn off the instrument. If you wish to preserve your performance data, you need to save it onto a disk.

If performance data has never been saved onto the disk, a " " symbol appears in the display. (This symbol disappears once you have saved the data on disk.)

ATELIER-01 36
1:150

○ Changing the name of performance data (Rename)

A name is automatically assigned to the performance data that you record. However, you may wish to change it to something more meaningful at some point.



1. Press the Load and Function buttons simultaneously.
2. Set the character that you wish to change (character will flash) using the Select buttons. Then use the Bwd/Fwd buttons to change the character.

The characters which can be selected are as follows:

0 1 2 3 4 5 6 7 8 9 space ! " # % & ' () * + , - . / : ;
= ? ^ _ A B C D E F G H I J K L M N O P Q R S T
U V W X Y Z a b c d e f g h i j k l m n o p q r s t u
v w x y z

To delete a character, press the Reset button. A space can be inserted by pressing the Rec button.

3. When you have finished editing the name, simultaneously press the Load and Function buttons again.

- * You cannot directly change or edit the name of performance data stored on a disk. The data must first be loaded into the instrument, edited, and then saved to disk again.
- * It is not possible to save during the Rename procedure. If you press the Save button during the Rename procedure, the following message will appear.

Can't Save
while Renaming.

○ Saving onto disk (Save button)



1. Insert a disk formatted on the AT-90 into the disk drive.
2. Press the Save button to perform the save.

- * When the disk already contains performance data with the same name as the data you're trying to save, the following message will appear. If you are just updating that data, and want to overwrite it, press the Rec button. If, however, you wish to save the new data separately, press the Reset button to cancel the procedure, change the name of the new data, and then save it.

Overwrite Song ?
Yes:REC No:RST

● Loading performance data into the AT-90 (Load button)

To edit (→p.55) or re-record performance data that is on disk, you must first load that data into the instrument.



1. Insert the correct disk into the disk drive.
 2. Press the Select buttons to select the performance data you wish to load.
- * The message below is shown when the performance data in the unit has not been saved to disk. If you don't mind erasing it, press the Rec button. If you wish to save this data, however, press the Reset button to cancel the procedure, and then save the data on disk. (→p.43)

Clear Song Sure?
Yes:REC No:RST

3. Press the Load button (or Rec button) to carry out the load operation.
- When you press the Rec button, the AT-90 goes into recording standby after the data is loaded.
- * If you load music data other than AT-90 music data (SMF music data, etc.), the rhythm data will be loaded into the Rhythm track, and the other data will be loaded into the Accomp track.

● Playing back performance data on disk (All Song Play button and Play button)

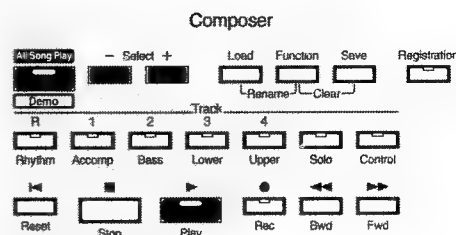
The AT-90 not only provides for the playback of music that you recorded on disk, but it also allows you to enjoy playing a wide variety of commercially available music data, such as those listed below.

SMF Music Data

- * The Standard MIDI File format was designed to provide a means for exchanging performance data among a wide variety of devices. In addition to the types of music data shown above, the AT-90 is also capable of playing back any Standard MIDI Files compatible with the GM or GS formats.

- * When the performance data is a Standard MIDI File, " *" will be displayed after the file name.

My Song *105
J:180



1. Insert the correct disk into the disk drive.
 2. When you wish to play back all the performance data in order, press the All Song Play button. When you only wish to play back one song, use the Select buttons to select the song and press the Play button.
- * To play back performance data from a disk, any data that may already be in the AT-90 must first be erased. The message below appears when there is some performance data already in the instrument that has not been saved on disk. If you don't mind erasing it, press the Rec button. If you do not want to lose this data, press the Reset button to cancel the procedure, and then save the data on disk. (→p.43)

Clear Song Sure?
Yes:REC No:RST

3. To stop playback, press the Stop button (or Reset button).
- * When the All Song Play button was used to start playback, playback can also be stopped by pressing that button again.
 - * By holding down the Stop button when you press the Play button, you can have the metronome sound two measures of count-in before playback starts.
 - * When "Please Wait" is shown in the display, it means the unit is searching for performance data. Please wait until the message disappears.

My Song *123
Please Wait.

● Erasing performance data on a disk

Follow the steps below to erase performance data that was saved on a disk.

1. Insert the disk into the disk drive.
2. Press the Function button.
3. Press the Select buttons to select "Disk Utility," and press the Rec button.

```
Disk Utility ☒
Yes:REC
```

4. Press the Select buttons to select "Delete Song," and press the Rec button.

```
☒ Delete Song
Yes:REC No:RST
```

5. Using the Bwd/Fwd buttons, select the performance data to be erased.
6. Press the Rec button.

You will see the following:

```
ATELIER-01 :01
Del Sure?REC/RST
```

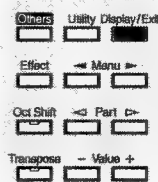
7. To go ahead with the erasure, press the Rec button again.

When erasing is completed, the basic screen will reappear.

To cancel the procedure, press the Reset button.

● Display/Exit button

The instrument's display provides a large variety of information. Of note are the two "basic screens." These two screens can be switched between by pressing the Display/Exit button. Even when some other screen is displayed, one of these basic screens appears when you press the Display/Exit button.



The information shown in the display is as follows:

Rhythm Screen:

Upper line : Rhythm Name

Lower line : Tempo/Name of Chord Played

```
Jazz Band
♩:124 C Maj
```

Composer Screen:

Upper line : Song Name/Measure Number

Lower line : Tempo/Name of Chord Played

```
ATELIER-01 123
♩:175 C Maj
```

When you have selected performance data on disk, the "file number" is shown in place of the "measure number."

```
ATELIER-01 :01
♩:175 C Maj
```

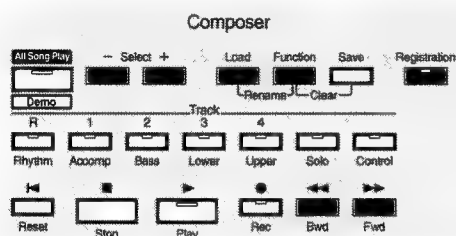
Saving/loading a set of registrations to/from disk

Saving a registration set (Save button)

The AT-90 allows you to record panel settings in each registration button 1-12. Up to 99 sets (each set including registrations for each of the 12 buttons) can be saved on a floppy disk.

● Assigning a name to a registration set

When saving registration settings, names of REGIST-01-99 will be assigned by default, but you can assign a name that will help you later to identify the contents of the registration set.



1. Press the Registration button (indicator lights).
2. Press the Load button and the Function button simultaneously.
3. Use the Select buttons to move the cursor, and use the Bwd/Fwd buttons to select a character.

The following characters can be selected.

0 1 2 3 4 5 6 7 8 9 space ! " # % & ' () * + , - . / : ;
= ? ^ _ A B C D E F G H I J K L M N O P Q R S T
U V W X Y Z a b c d e f g h i j k l m n o p q r s t u
v w x y z

You can also use the Reset button to delete a character, and the Rec button to insert a space.

4. When you have finished assigning the name, simultaneously press the Load button and the Function button once again.

The registration set in the AT-90's internal memory has now been named.

```
REGIST-01  ---
Mem:My Regist
```

- * It is not possible to save during the process of assigning a name. If you press the Save button during this process, the following message will appear.

```
Can't Save
while Renaming.
```

● Saving to disk (Save button)

1. Make sure that the disk drive contains a disk that was formatted by the AT-90.
2. If the Registration button indicator is not lit, press the Registration button to make the indicator light.
3. Use the Select buttons to select the number that you wish to save to.

Numbers which have not been used in the Saving operation will be displayed as "---".

```
REGIST-01  ---
Mem:
```

4. Press the Save button to execute the save operation.

When saving is completed, the basic screen will reappear.

To cancel the operation, press the Registration button.

When the data is saved to floppy disk, the indication of "---" will change to "USE".

If you have assigned a name, the data will be saved to floppy disk with that name.

```
My Regist  USE
Mem:My Regist
```

- * If you press the Save button for a number for which "USE" is displayed, the following message will appear.

To change the contents of an existing registration set, press the Rec button. To save a new registration set, press the Reset button to cancel the procedure, use the Select buttons to select a number for which "---" is displayed, and then save the data.

```
OverwriteRegist?
Yes:REC No:RST
```

Loading a previously saved registration set (Load button)

Here's how to recall a previously saved registration set from disk into the memory of the AT-90.

* Be aware that when you load a set of registrations from disk, the set of registrations that were previously in internal memory will be lost.

1. Insert the floppy disk into the disk drive.
2. Press the Registration button (indicator lights).
3. Use the Select buttons to select the registration set that you wish to load.
4. Press the Load button to execute loading.

When loading is complete, the basic screen will reappear.

To cancel the procedure, press the Registration button.

Deleting a previously saved set of registrations (Clear)

Here's how to delete a registration set that was saved to disk.

1. Insert the floppy disk into the disk drive.
2. Press the Registration button (indicator lights).
3. Use the Select buttons to select the registration set that you wish to delete.
4. Simultaneously press the Function button and the Save button.

The following display will appear.

Delete Regist?
Yes:REC No:RST

5. If you are sure that you wish to delete the data, press the Rec button.

When the data has been deleted, the basic screen will reappear.

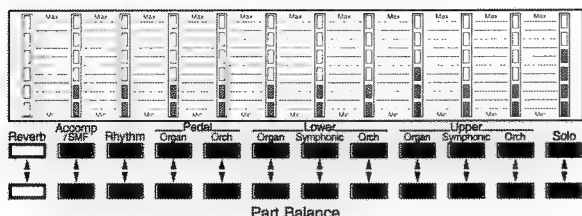
To cancel the operation, press the Reset button.

When a registration set has been deleted, the indication of "USE" will change to "--". If you had assigned a name to the set you deleted, the name will revert back to REGIST-XX.

Other Kinds of Settings

Adjust the volume balance (Part Balance buttons)

The instrument allows you to adjust the volume balance individually for each Part.



- ✧ The various volume levels are adjusted using the corresponding buttons.

When you press the upper button (▲), the volume increases; when you press the lower button (▼), the volume decreases.

Note, however, that the following buttons are used to adjust the volume of a multiple number of Parts.

Accomp/SMF button:

Automatic accompaniment (except bass) Playback of performance data from something other than the AT-90

Rhythm button:

- When Manual Perc is ON
Manual Percussion
- When Manual Perc is OFF
Rhythm performance, Manual Drums, Sound Effects

Pedal Organ button:

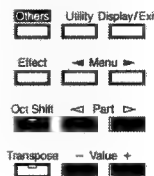
Pedal Organ, Bass part of automatic accompaniment

Transpose the pitch in octave units (Oct Shift button)

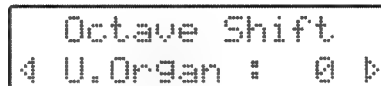
Octave Shift is a function that allows you to alter the pitch of what is played by one or more octaves.

You can apply an octave shift to a total of seven Parts; all the Upper and Lower Parts (Organ/Symphonic/Orchestral), and the Solo Part.

For example in the upper or lower keyboards, you might select the same voice for two parts but shift them 1 octave apart to create a richer sounding voice. This function can also be used to play voices in a range that the keyboard would not normally reach.



1. Press the Oct Shift button.
2. Press the Part buttons to select a performance Part to which you wish to apply an Octave Shift.



3. Use the Value buttons to make settings for the amount of shift.

The value can be set within the range of +/- 2 octaves.

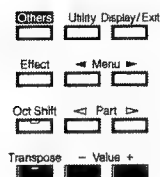
Press the Oct Shift button or the Display/Exit button to return to the basic screen.

When any Part is set to any value other than 0, the Oct Shift button indicator will light.

- * Note that when you apply Octave Shifts to certain Voices, you can produce a situation where the lower or upper range has been shifted beyond the recommended note range. For this reason, they may not sound as expected.

Transpose to a different key (Transpose button)

This function allows you to transpose the keyboard to another key. This lets you play in any key using the familiar notes of the C major scale but the music to sound in another (brighter) key.



1. Press the Transpose button.
2. Set the transpose value using the Value buttons.



Acceptable values range from A flat to G (in semitone steps).

Press the Transpose button or the Display/Exit button to return to the basic screen.

When the transpose setting is anything other than C, the Transpose button indicator will light.

- * By pressing the + and - Value buttons simultaneously, you can restore the default setting (C).

Make fine adjustments to the effect of a voice (Effect button)

You can make fine adjustments to the (reverb/sustain/rotary) effect. There are three items (menus).

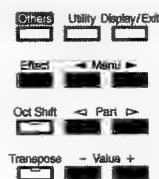
Reverb Type

Reverb Depth

Sustain Length

Rotary Speed

Rotary Color

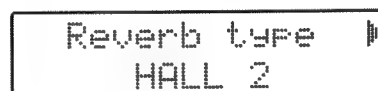


1. Press the Effect button.
2. Press the Menu buttons to select a menu.
3. When adjusting Reverb Depth or Sustain Length, press the Part buttons to select the part or keyboard.
4. Use the Value buttons to set the desired value.

Press the Effect button or the Display/Exit button to return to the basic screen.

● Reverb Type

You can select from the following eight types of reverb:



- ROOM 1 : Reverberation of a small room
- ROOM 2 : Reverberation of a small club
- ROOM 3 : Reverberation of a large room
- HALL 1 : Reverberation of large concert hall
- HALL 2 : Reverberation of a small concert hall
- PLATE : A bright, metallic reverberation
- DELAY : An echo-like sound repeated several times
- PAN DELAY : A delay which pans the sound back and forth between the left and right speakers

● Reverb Depth

The depth of the reverb can be set (0–10) for the following 16 Parts. You can make independent settings for each Part.

For the three Parts of Accomp, Rhythm, and Accomp Bass, you have the option of selecting the AUTO setting. Parts for which AUTO is selected will be set to the reverb depth that is most suitable for the currently selected rhythm.

◀ Reverb Depth ▶
◀ U.Organ : 8 ▶

Accomp, Rhythm, Manual Drums, Manual Percussion, Accomp Bass, Pedal Organ, Pedal Orchestral, Lower Organ, Lower Symphonic, Lower Orchestral, Lower Footage, Upper Organ, Upper Symphonic, Upper Orchestral, Upper Footage, Solo

Accomp refers to automatic accompaniment (except Bass); while Accomp Bass is the bass for an automatic accompaniment.

● Sustain Length

The sustain length can be set independently (SHORT, MIDDLE, LONG) for the following three keyboards. You can make a separate setting for each keyboard.

◀ Sustain Length ▶
Upper : LONG ▶

Upper, Lower, Pedal Bass

● Rotary Speed

This setting allows you to finely adjust the speed of the Rotary effect. You can select from the three available speeds (SLOW, NORMAL, FAST).

◀ Rotary Speed ▶
NORMAL

- * This setting remains stored in memory even while power is turned off.

● Rotary Color

This setting allows you to choose the brightness of the sound (BRIGHT, MELLOW) obtained when using the Rotary effect.

◀ Rotary Color ▶
BRIGHT

- * This setting remains stored in memory even while power is turned off.

Various other settings (Utility button)

You can make settings for the following 17 items (menus).

Aftertouch

Aftertouch Sense (Aftertouch sensitivity)

Initial Touch

Pedal Bass Mode

Left Foot Switch Assignment

(Selects function for left foot switch)

Right Foot Switch Assignment

(Selects function for right foot switch)

Bender/Vibrato Destination

Pitch Bend Range

Manual Drums Set

Solo Split Point

Bass Split Point

Chord Hold

Registration Arranger Update

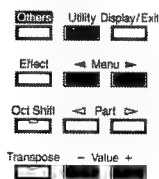
(registration recall timing)

Expression Curve

Tx MIDI Channel (MIDI output channel)

Master Tune

LCD Contrast



1. Press the Utility button.
2. Press the Menu buttons to select a menu.
3. Use the Value buttons to set the desired value.

Press the Utility button or the Display/Exit button to return to the basic screen.

● Aftertouch

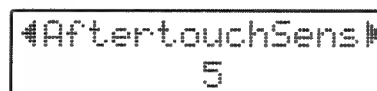
This setting is used to turn ON/OFF the Aftertouch feature. (Aftertouch applies vibrato when additional pressure is placed on keys that being played.)



- * Aftertouch can be obtained only from the Upper keyboard.
- * Please note that not all of the Voices are designed to provide a response to Aftertouch, even with this setting at ON.

● Aftertouch Sense (Aftertouch sensitivity)

This adjusts the depth of the aftertouch effect. (Setting: 1-10)

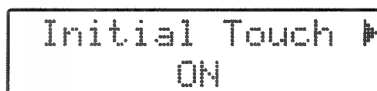


Higher settings of this value will allow deeper vibrato to be applied when you apply pressure to the keyboard.

- * This setting remains stored in memory even while power is turned off.

● Initial Touch

This setting is used to turn ON/OFF the Initial Touch feature. (It translates the force used to press keys into an equivalent amount of volume.)



- ON : The harder you play, the higher the volume.
- OFF : Volume remains constant regardless of how hard you play

● Pedal Bass Mode

Specify whether the bass sound will be able to play multiple notes or whether it will be restricted to single notes.

◀PedalBass Mode▶
MONOPHONIC

MONOPHONIC:

Only single notes will be sounded.

POLYPHONIC:

Multiple notes can be sounded.

● Left / Right Foot Switch Assignment

You can select any of the following functions and assign them to the foot switches on both sides of the expression pedal.

◀ Left Foot Sw ▶
GLIDE

◀ Right Foot Sw ▶
ROTARY FAST/SLOW

- * You cannot assign the same function to both the left and right switches.

GLIDE

ROTARY FAST/SLOW

LEADING BASS

RHYTHM START/STOP

COMPOSER PLAY/STOP

INTRO/ENDING

FILL IN TO VARIATION

FILL IN TO ORIGINAL

ADVANCED/BASIC

DAMPER OF UPPER

GLIDE:

This feature temporarily lowers the pitch, then gradually returns it to what it was originally.

LEADING BASS:

The Leading Bass function will be active only while you are pressing the switch.

COMPOSER PLAY/STOP:

The switch will serve as a Play/Stop button for the Composer. Performance data will either start playing or stop with each press of the switch.

DAMPER OF UPPER:

While the switch is pressed, only the Upper keyboard notes will be sustained.

The action obtained with the other items will be the same as pressing the relevant buttons on the panel.

● Bender/Vibrato Destination

This setting specifies which Section (from the following three) you wish to have the effect applied to when operating the Pitch Bend/Vibrato lever.

◀Bender/Vibrato▶
to UPPER

UPPER:

The effect is applied to the sound played on the Upper keyboard.

LOWER:

The effect is applied to the sound played on the Lower keyboard.

PEDAL BASS:

The effect is applied to the sound played on the pedal board.

● Pitch Bend Range

This setting allows you to choose the maximum amount of change (range) permissible when using pitch bend. The range can be set anywhere between 1-12 (in semitone units; maximum of one octave).

◀PitchBendRange▶
2

- * Manual Drums, Sound Effects and manual percussion are fixed at one octave, regardless of this setting.

● Manual Drums Set

This setting allows you to choose one of the following eight Drum Sets and a Sound Effects Set.

ManualDrumsSet
STANDARD

STANDARD
ROOM
POWER
ELECTRONIC
TR-808

JAZZ
BRUSH
ORCHESTRA
SOUND EFFECTS

● Solo Split Point

This setting is used to set the Solo Split Point (lower limit of the playable range of the Solo Voice) of the Lower keyboard to any desired position. (E1 to G7)

SoloSplitPoint
B 4

- * By simultaneously pressing the + and - Value buttons, you can restore the default setting B4.

● Bass Split Point

You can freely set the Bass Split Point (the upper limit for which the Bass voice will sound) at any point of the Lower keyboard. (Setting: E1-G7)

BassSplitPoint
C 3

- * If you simultaneously press the + and - Value buttons, this will be reset to the initial value (C3).

● Chord Hold

Chord Hold can be switched ON/OFF. Chord Hold is a function which allows you to play automatic accompaniment without holding the keys down on the Lower keyboard.

Chord Hold
ON

ON: The chord that was played on the Lower keyboard is sustained (even if you release the keys), and automatic accompaniment continues.

OFF: When you release the keys that you played in the Lower keyboard, the automatic accompaniment is not heard. Only the Rhythm performance will continue.

● Registration Arranger Update (registration recall timing)

You can specify how the settings related to rhythm performances and automatic accompaniment will be recalled when you press a registration button 1-12.

ArrangerUpdate
DELAYED

DELAYED: Settings related to rhythm performances and automatic accompaniment will be recalled when you hold a button 1-12 for several seconds.

INSTANT: Settings related to rhythm performances and automatic accompaniment will be recalled the instant you press a button 1-12.

- * This setting will be remembered even if the power is turned off.

● Expression Curve

Specify how the effect will be applied when the Expression pedal is pressed.

ExpressionCurve
1

- 1: The pedal will affect the rhythm playback and the automatic accompaniment only slightly.
- 2: The pedal will affect the rhythm playback and the automatic accompaniment in the same way as it affects the keyboard playing.

- * This setting will be remembered even if the power is turned off.

● Tx MIDI Channel (MIDI output channel)

For each keyboard (upper, lower, and pedal bass) you can specify the channel on which your playing will be transmitted as MIDI messages. (Value: 1–16)

When you use the MIDI connectors or the computer connector of the AT-90 to transmit musical data to external devices, make these MIDI channel settings as necessary. (For details refer to p.59.)

◀TxMIDI Channel▶
Upper : 13 ▶

- * It is not possible to set Upper, Lower, and Pedal Bass to the same channel.
- * MIDI messages for the Solo part will be transmitted only when To Lower is ON.

● Master Tune

This function allows the master tuning to be set at any value between 415.3 Hz and 466.2 Hz. The instrument accepts settings in increments of 0.1 Hz.

◀ Master Tune ▶
440.0 Hz

- * By pressing the + and - Value buttons simultaneously, you can restore the default setting (440.0 Hz).
- * This setting remains stored in memory even while power is turned off.

● LCD Contrast

This setting allows you to adjust the contrast of the display. (Available settings: 1–10)

◀ LCD Contrast ▶
5

- * This setting remains stored in memory even while power is turned off.

Settings for the Composer (Function button)

● Count-In Recording

This setting (ON/OFF) determines whether or not a metronome count-in (2 measures) will be heard after pressing the Play button on recording. (The count-in helps you establish the tempo before you begin playing.)

1. Press the Function button.
2. Using the Select buttons, select "Count-In Rec."

◀ Count-In Rec ▶
ON </>

3. Use the Bwd/Fwd buttons to turn it ON or OFF.

Press the Function button or the Display/Exit button to return to the basic screen.

● Metronome

This setting determines whether or not the metronome will sound.

REC : Heard only while recording
ON : Heard constantly
OFF : Not heard at all

1. Press the Function button.
2. Using the Select buttons, select "Metronome."

◀ Metronome ▶
OFF </>

3. Use the Bwd/Fwd buttons to select REC, ON, or OFF.

Press the Function button or the Display/Exit button to return to the basic screen.

● Metronome Volume

Carry out the steps below to adjust the volume of the metronome.

1. Press the Function button.
2. Using the Select buttons, select "Metronome Vol."

Metronome Vol.
10

3. Press the Bwd/Fwd buttons to select the desired volume level (1–10).

Press the Function button or the Display/Exit button to return to the basic screen.

● Setting for the beat

This setting determines the beat (time signature) to be used when recording performances.

Numerator : 1 or more (denominator x 2-1)

Denominator : 2, 4, 8, 16

1. Press the Function button.
2. Select "Beat" using the Select buttons.

Beat
4/ 4 /REC

3. Use the Bwd/Fwd buttons to set the numeric value for the numerator. Use the Rec button to move the cursor from the numerator to the denominator (and back again if necessary).

Press the Function button or the Display/Exit button to return to the basic screen.

- * When recording rhythm performances or automatic accompaniment, the beat is set automatically.
- * You cannot change the beat of previously recorded data.

● Edit Menu (editing music data)

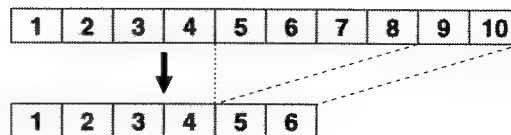
Music data that you record can be edited using five functions.

○ Delete Measure

(delete part of the recorded data)

This function lets you delete specified measures (bars) of music data from all tracks. When data is deleted, subsequent data will be moved forward to fill the gap.

Example: To delete measures 5–8



1. Press the Function button.
2. Use the Select buttons to select "Edit Menu," and press the Rec button.

Edit Menu
Yes:REC

3. Use the Select buttons to select "Delete Measure," and press the Rec button.

Delete Measure
Yes:REC No:RST

4. Specify the area to be deleted. Use the Bwd/Fwd buttons to set the numerical values, and use the Rec/Reset buttons to switch between pages of the display.

The following items can be set.

from : beginning measure (bar)

for : number of measures (bars) from the beginning measure

For example if you wish to delete measures 4–12, set these items to "from:4 for:9".

If you wish to delete from a certain measure to the last measure, set for:ALL.

After setting "for," press the Rec button to advance to the following display.

Delete Measure?
Yes:REC No:RST

5. To execute the delete operation, press the Rec button once again.

When the data has been deleted, the basic screen will reappear.

To cancel the operation, press the Reset button.

○ Delete Track

(delete music data from a track)

This function lets you delete music data from a track that you specify.

1. Press the Function button.
2. Use the Select buttons to select "Edit Menu" and press the Rec button.
3. Use the Select buttons to select "Delete Track" and press the Rec button.

Delete Track
Yes:REC No:RST

4. Use the Bwd/Fwd buttons to select the track that you wish to delete.

Settings : RHYTHM, ACCOMP, BASS, LOWER,
UPPER, SOLO, CONTROL

5. Press the Rec button.

The following display will appear.

Delete Track?
Yes:REC No:RST

6. To execute the Delete Track function, press the Rec button once again.

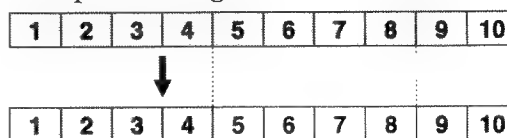
When the data has been deleted, the basic screen will reappear.

To cancel the operation, press the Reset button.

○ Erase (erase music data)

The Erase function erases a specified portion of music data, leaving a blank area. This function is like using a pencil eraser to erase notes from a musical score.

Example: Erasing measures 5–8



1. Press the Function button.
2. Use the Select buttons to select "Edit Menu" and press the Rec button.
3. Use the Select buttons to select "Erase Event" and press the Rec button.

Erase Event
Yes:REC No:RST

4. Use the Bwd/Fwd buttons to select the data to be erased, and press the Rec button.

ALL : all music data

NOTE : notes played on the keyboard

EXPRESSION : expression pedal data

CONTROL : panel operations

5. Use the Bwd/Fwd buttons to select the part from which you wish to erase data, and press the Rec button.

Settings : RHYTHM, ACCOMP, BASS, LOWER,
UPPER, SOLO, ALL

If you select ALL, data will be erased from all parts.

- * If you have selected EXPRESSION as the type of data to be erased, this setting will not be available.

6. Specify the area in which the data will be erased. Use the Bwd/Fwd buttons to make settings, and use the Rec/Reset buttons to switch between pages of the display.

The following items can be set.

from : beginning measure

for : the number of measures from the beginning measure

For example if you wish to erase measures 4–12, set “from: 4 for: 9”.

If you wish to erase to the last measure, set “for: ALL”.

When you set “for” and then press the Rec button, the following display will appear.

```

Erase Event?
Yes:REC No:RST
  
```

7. To execute the Erase function, press the Rec button once again.

When erasure is complete, the basic screen will reappear.

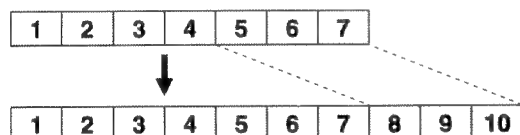
To cancel the operation, press the Reset button.

○ Copy (copy music data)

This function lets you copy a portion of music data to a different measure location in the same track.

- * If music data already exists at the copy destination, that music data will disappear.

Example : If you wish to copy measures 5–7 to measure 8



1. Press the Function button.
2. Use the Select buttons to select “Edit Menu” and press the Rec button.
3. Use the Select buttons to select “Copy” and press the Rec button.

```

Copy
Yes:REC No:RST
  
```

4. Use the Bwd/Fwd buttons to select the track whose data you wish to copy, and press the Rec button.

Settings : RHYTHM, ACCOMP, BASS, LOWER, UPPER, SOLO, CONTROL, ALL

If you select ALL, the data of all tracks will be copied.

5. Specify the area, the copy destination, and the number of times that the data will be copied. Use the Bwd/Fwd buttons to make settings, and use the Rec/Reset buttons to switch between pages of the screen.

The following settings can be made.

from : beginning measure

for : number of measures from the beginning measure

to : measure number of the copy destination

time : number of times that the data will be copied

For example if you wish to copy measures 4–12 twice after the last measure, make settings of “from: 4 for: 9 to: END time: 2”.

To specify until the last measure, set “for: ALL”.

After making the “time” setting, press the Rec button and the following display will appear.

```

Copy Sure?
Yes:REC No:RST
  
```

6. To execute the Copy function, press the Rec button once again.

When copying is complete, the basic screen will reappear.

To cancel the operation, press the Reset button.

○ Quantize (correct timing inaccuracies)

Quantize is a function that corrects the timing of notes to a specified interval.

1. Press the Function button.
2. Use the Select buttons to select "Edit Menu" and press the Rec button.
3. Use the Select buttons to select "Quantize" and press the Rec button.

Quantize
Yes:REC No:RST

4. Use the Bwd/Fwd buttons to select the track whose data you wish to quantize, and press the Rec button.

Settings : RHYTHM, ACCOMP, BASS, LOWER, UPPER, SOLO, ALL

If you select ALL, data of all tracks will be quantized.


5. Specify the area that will be quantized. Use the Bwd/Fwd buttons to set the values, and use the Rec/Reset buttons to switch between pages of the screen.

The following items can be set.

from : beginning measure









for : number of measures from the beginning measure

Res : timing to which notes will be corrected (Resolution)

For example if you want to quantize the notes of measures 4–12 to the nearest 16th note, set "from: 4 for: 9 Res: .

To specify the data to the last measure, set "for: ALL".

"Res"(Resolution) can be set to the following values.

 Half note	 8th note triplet
 Quarter note	 16th note
 Quarter note triplet	 16th note triplet
 8th note	 32nd note

After setting "Res," press the Rec button and the following display will appear.

Quantize Sure?
Yes:REC No:RST

6. To execute the Quantize function, press the Rec button once again.

When quantization is completed, the basic screen will reappear.

To cancel the operation, press the Reset button.

● Channel Mute

This function allows you to mute performance data on an individual channel basis.

- * Channel Mute is effective only while the menu is displayed.

1. Press the Function button.
2. Press the Select buttons to select "Ch. Mute."

Ch.Mute</>/REC
1234567890123456

3. Using the Bwd/Fwd buttons, select the channel you wish to Mute.

From the left, they are: 1Ch, 2Ch.....15Ch, 16Ch.

4. Press the Rec button.

Ch.Mute</>/REC
-234567890123456

The number changes to "-" showing that it is muted.

The mute function can be released by pressing the Rec button again.

When you press the Function button or the Display/Exit button, you will return to the basic screen and the Channel Mute function will be turned off.

Connecting MIDI devices or computers

The AT-90 provides MIDI connectors and a computer connector to allow music data to be exchanged with external devices. By using these connectors to connect other devices to the AT-90, you can enjoy an even wider range of possibilities.

* As necessary, set the MIDI transmit channel. (→p.54)

Connections with a MIDI device

The AT-90 has two MIDI connectors; MIDI IN and MIDI OUT.

MIDI OUT connector

Only the data produced when you play the keyboard or press the damper pedal is transmitted from this connector to external MIDI devices.

MIDI messages for the Solo part will be transmitted only when To Lower is ON.

MIDI IN connector

MIDI data transmitted by an external MIDI device is received at this connector. In response to receiving MIDI data, sound can be produced or voices can be selected, etc.

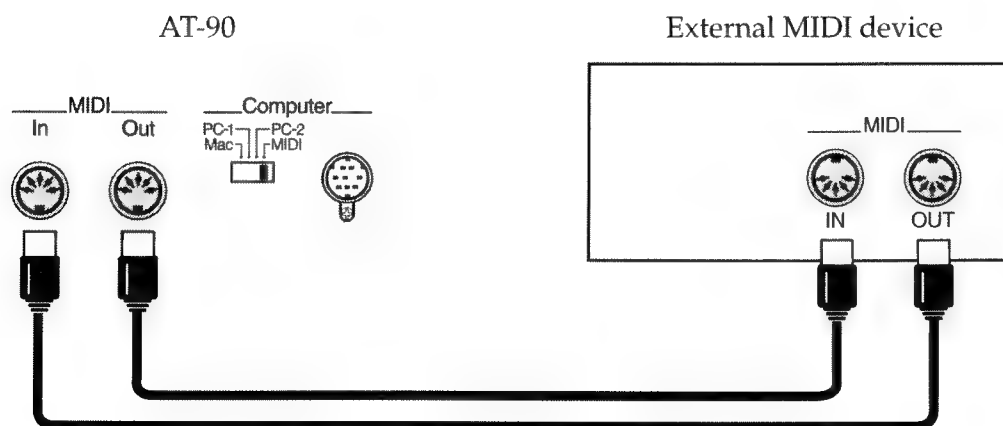
1. Set the Computer switch located on the back of the AT-90 to the "MIDI" position.

* Before changing the setting of the Computer switch, make sure that the AT-90's power is turned off.

2. Use a MIDI cable to connect the MIDI connectors of the AT-90 and the other MIDI device.

* It is not always necessary to connect both MIDI cables. Make MIDI connections as necessary for your situation.

* Detailed information on how the AT-90 transmits and receives MIDI data is given in the "MIDI Implementation" booklet which is sold separately. If you require this detailed information (for example if you wish to connect the AT-90 with other MIDI devices in advanced applications), please order and purchase the booklet from your dealer.



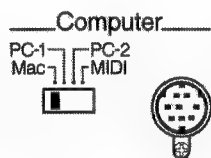
Connections with a computer

By connecting the AT-90's Computer connector to the serial port of a computer, bi-directional transmission of music data can take place. The method of connection will depend on the type of computer.

- * Before changing the setting of the Computer switch, make sure that the AT-90's power is turned off.

● Connection with an Apple Macintosh

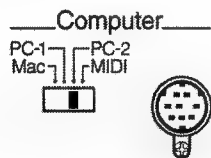
1. Set the Computer switch located on the back of the AT-90 to the "Mac" position.
2. Use a computer cable to connect the modem port (or the printer port) of the Apple Macintosh to the Computer connector of the AT-90.



3. Using the Apple Macintosh "PatchBay" utility, set the Interface Type (MIDI interface clock) to 1 MHz.

● Connection with an IBM PC

1. Set the Computer switch located on the back of the AT-90 to the "PC-2" position.
2. Use a computer cable to connect the serial port (COM1, COM2, etc.) of the IBM PC to the Computer connector of the AT-90.



- * The only types of data transmitted from the MIDI OUT and Computer connectors are the messages produced when you play the upper, lower, and pedal bass keyboards, and the damper pedal messages.

MIDI messages for the Solo part will be transmitted only when To Lower is ON.

Troubleshooting

● When you press the **POWER** switch, power doesn't come on.

- ❑ Power cord is not connected correctly (→p.11).

● Sound is not produced

- ❑ The Master Volume slider is set too low (→p.14).
- ❑ Headphones are connected (→p.11).
- ❑ The volume is set too low as a result of the Part Balance buttons (→p.48).
- ❑ The volume is set too low because of the expression pedal (→p.14, 32).
- ❑ You do not have a Voice selected (→p.16–19).
- ❑ The pedal cord is not connected correctly (→p.11).
- ❑ Manual Drums is turned on, and you are playing keys to which drums or sound effects have not been assigned (→p.30, 64).

● Pedals don't work

- ❑ The pedal cord is not properly connected (→p.11).
- ❑ The damper pedal affects only the Lower keyboard. It won't work for the Upper keyboard and pedal board (→p.32).
- ❑ While playing back performance data containing data directed at the expression pedal, the pedal will not be able to provide its normal response when you step on it.

● When you release your fingers from keys in the Lower keyboard while Automatic Accompaniment + Rhythm is playing, the rhythm performance alone remains playing.

- ❑ Chord Hold is at OFF (→p.53).

● When you release your fingers from keys in the Lower keyboard, the notes continues sounding.

- ❑ Lower Voice Hold is at ON (→p.39).

● Even though you press only one key, a multiple number of notes sound.

- ❑ Harmony Intelligence is at ON (→p.21).
- ❑ Chord Intelligence is turned ON (→p.53).

● Automatic accompaniment sounds odd

- ❑ The keys for a chord were not pressed simultaneously.
- ❑ Even though Chord Intelligence is OFF, you think it is ON, and are abbreviating chords (→p.38).
- ❑ If performance data for other than the AT-90 is played simultaneously with the automatic accompaniment, the automatic accompaniment may not sound as normal. This is not a malfunction.

● Rhythm sounds odd

- ❑ If performance data for other than the AT-90 is played simultaneously with the rhythm, the rhythm may not sound as normal. This is not a malfunction.

● Pitch is off

- ❑ A transpose is in effect (→p.49).
- ❑ The tuning is incorrect (→p.54).
- ❑ While set for an octave shift, you are playing keys beyond the recommended range. This does not indicate a malfunction (→p.48).

● Performance data cannot be played back

- ❑ While the Function menu appears in the display (with the exception of Channel Mute), playback is not allowed.

● Cannot record

- ❑ While the Function menu appears in the display, recording is not allowed.

● Sound of metronome is strange

- ❑ If the metronome is sounded while a Standard MIDI File is played back, the metronome can sometimes sound different than usual. This does not indicate a malfunction.

Display messages

■ Delete Song
Can't Execute.

Cause:

- There is no disk in the disk drive.
- The disk drive contains a disk that was formatted by another device.
- Music data does not exist.

Solution:

- Before executing the procedure, insert a disk into the disk drive.
- Before executing the procedure, insert a disk that was formatted by the AT-90 and contains music data that you wish to delete.

Can't Execute
Regist Function.

Cause:

The disk drive contains a disk that was formatted by another device.

Solution:

Before executing the procedure, insert a disk that was formatted by the AT-90.

Can't Load
This Rhythm.

Cause:

The Rhythm data is excessively large, and cannot be loaded.

Can't Load
This Song.

Cause:

- The performance data is excessively large, and cannot be loaded.
- The performance data contains data incompatible with the AT-90, and cannot be loaded.

Can't Modify
This Song.

Cause:

- You have pressed the Rec button in an attempt to load and then enter recording standby mode, but the performance data is too large to be loaded.
- You have pressed the Rec button in an attempt to load and then enter recording standby mode, but loading is not possible since the performance data contains data incompatible with the AT-90.

Can't Play
This Song.

Cause:

- The performance data is excessively large, so it cannot be played back.
- Playback is not possible since performance data incompatible with the AT-90 is included.

Can't Save
onto This Disk.

Cause:

- You cannot save performance data on disks containing Standard MIDI Files.
- You cannot save performance data on master disks.
- You cannot save performance data on disks formatted for MS-DOS.

Solution:

Insert a disk formatted on the AT-90 into disk drive, then try the procedure again.

Can't Save
This Song.

Cause:

The performance data you are attempting to save contains data designed to prevent unauthorized copying. As a result, it cannot be saved onto disk.

Can't Save
while Renaming.

Cause:

It is not possible to save during the Rename operation.

Solution:

Complete the Rename operation by simultaneously pressing the Load button and the Function button, and then save the data.

Clear Song Sure?
Yes:REC No:RST

Cause:

To carry out the procedure, you first need to erase performance data in the unit. This message asks you to confirm that you don't mind doing this.

Solution:

To erase the data, press the Rec buttons. When you do not want to erase it, press the Reset button, then save the data on disk.

Disk Problem
has Occurred.

Cause:

The data transfer could not be processed correctly.

Solution:

Try taking out, then inserting the disk again (or replace the disk with a different one), then try the procedure over again.

Factory Setup
is Loaded.

Cause:

The internal settings were lost (Registrations, etc.) because the instrument was not turned on for about a month.

Solution:

The basic display will appear after the instrument has been returned automatically to all the factory default settings.


Improper Disk:
Please Format.

Cause:

- The disk is one that was used with some other device.
- The disk is brand new, and has not been formatted yet.

Solution:

Format the disk according to the steps on page. 40.

Format Disk 
Insert New Disk.

Cause:

A disk is not inserted in the disk drive.

Solution:

Insert a disk to be formatted into disk drive, then try the procedure again.

Internal Memory
is Full.

Cause:

Because the unit's memory is full to capacity, recording was canceled.

Internal Memory
Near Limit

Situation:

The unit is warning you that its memory will soon become full to capacity, so not much more recording can be done.

No Room
on Disk

Cause:

- Because the disk is full, nothing further can be stored on it.
- Up to a maximum of 99 songs (2HD), or 56 songs (2DD) can be stored on disk.

Solution:

Replace the disk with a different one, or erase some of the data that is on the disk.

Overwrite Regist?
Yes: REC No: RST

Cause:

This registration is already being used.

Solution:

To overwrite the previous registration data in this memory, press the Rec button. If you decide to keep the previous registration data in this memory and save your settings in an unused memory, press the Reset button, press the Select button to select a number for which "—" is displayed, and then save the data.

Overwrite Song ?
Yes: REC No: RST

Cause:

There already is performance data having the same name on the disk.

Solution:

To replace the existing data with the new version, press the Rec button. To save it as a separate new file, press the Reset button first. Then, after changing the name (→p.43), save it on disk.

Write-Protected
Disk

Cause:

The disk's protect tab is at the "ON" position.

Solution:

Slide the disk's protect tab to the "OFF" position, and do the procedure over again.

Drum set list

Note No.	STANDARD/JAZZ	ROOM	POWER	ELECTRONIC	TR-808	BRUSH	ORCHESTRA	Sound Effects
28	Tap						Pedal Hi-Hat [EXC1]	
29	Scratch Push						Open Hi-Hat [EXC1]	
30	Scratch Pull						Ride Cymbal	
31	Sticks							
32	Square Click							
33	Metronome Click							
34	Metronome Bell							
35	Kick Drum 2						Concert BD 2	
36	Kick Drum 1		MONDO Kick	Elec BD	808 Bass Drum		Concert BD 1	
37	Side Stick				808 Rim Shot			
38	Snare Drum 1		Gated SD	Elec SD	808 Snare Drum	Brush Tap	Concert SD	
39	Hand Clap					Brush Slap	Castanets	High Q
40	Snare Drum 2			Gated SD		Brush Swirl	Concert SD	Slap
41	Low Tom 2	Room Low Tom 2	Room Low Tom 2	Elec Low Tom 2	808 Low Tom 2		Timpani F	Scratch Push
42	Closed Hi-Hat [EXC1]				808 CHH [EXC1]		Timpani F#	Scratch Pull
43	Low Tom 1	Room Low Tom 1	Room Low Tom 1	Elec Low Tom 1	808 Low Tom 1		Timpani G	Sticks
44	Pedal Hi-Hat [EXC1]				808 CHH [EXC1]		Timpani G#	Square Click
45	Mid Tom 2	Room Mid Tom 2	Room Mid Tom 2	Elec Mid Tom 2	808 Mid Tom 2		Timpani A	Metronome Click
46	Open Hi-Hat [EXC1]				808 OHH [EXC1]		Timpani A#	Metronome Bell
47	Mid Tom 1	Room Mid Tom 1	Room Mid Tom 1	Elec Mid Tom 1	808 Mid Tom 1		Timpani B	Guitar sliding finger
48	High Tom 2	Room Hi Tom 2	Room Hi Tom 2	Elec Hi Tom 2	808 Hi Tom 2		Timpani c	Guitar cutting noise (down)
49	Crash Cymbal 1				808 Cymbal		Timpani c#	Guitar cutting noise (up)
50	High Tom 1	Room Hi Tom 1	Room Hi Tom 1	Elec Hi Tom 1	808 Hi Tom 1		Timpani d	String slap of double bass
51	Ride Cymbal 1						Timpani d#	Fl. Key Click
52	Chinese Cymbal			Reverse Cymbal			Timpani e	Laughing
53	Ride Bell						Timpani f	Screaming
54	Tambourine							Punch
55	Splash Cymbal							Heart Beat
56	Cowbell				808 Cowbell			Footsteps1
57	Crash Cymbal 2						Concert Cymbal 2	Footsteps2
58	Vibra Slap							Applause
59	Ride Cymbal 2						Concert Cymbal 1	Door Creaking
60	High Bongo							Door
61	Low Bongo							Scratch
62	Mute High Conga				808 High Conga			Windchime
63	Open High Conga				808 Mid Conga			Car-Engine
64	Low Conga				808 Low Conga			Car-Stop
65	High Timbale							Car-Pass
66	Low Timbale							Car-Crash
67	High Agogo							Siren
68	Low Agogo							Train
69	Cabasa							Jet plane
70	Maracas				808 Maracas			Helicopter
71	Short Hi Whistle [EXC2]							Starship
72	Long Low Whistle [EXC2]							Gun Shot
73	Short Guiro [EXC3]							Machine Gun
74	Long Guiro [EXC3]							Laser gun
75	Claves				808 Claves			Explosion
76	High Wood Block							Dog
77	Low Wood Block							Horse-Gallop
78	Mute Cuica [EXC4]							Birds
79	Open Cuica [EXC4]							Rain
80	Mute Triangle [EXC5]							Thunder
81	Open Triangle [EXC5]							Wind
82	Shaker							Seashore
83	Jingle Bell							Stream
84	Bell tree							Bubble
85	Castanets							
86	Mute Surdo [EXC6]							
87	Open Surdo [EXC6]							
88	---	---	---	---	---	---	Applause	

Blank : same percussion instruments as the Standard Set

--- : no sound

EXC1 : will not sound simultaneously with other percussion instruments of the same number

MIDI Implementation Chart

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	12(Lower), 13(Upper), 14(Bass) 1-16	1-16	
Mode	Default Messages Altered	x x *****	Mode 3 Mode 3, 4(M=1)	* 2
Note Number :	True Voice	28-103 *****	0-127 0-127	
Velocity	Note ON Note OFF	O * 1 x 8n v=64	O x	
After Touch	Key's Ch's	x x	O O	
Pitch Bend		x	O	
Control Change	0, 32	x	O	Bank select Modulation Portamento time Data entry Volume Panpot Expression Hold 1 Portamento Sostenuto Soft Portamento control Effect1 depth Effect3 depth NRPN LSB, MSB RPN LSB, MSB
	1	x	O	
	5	x	O	
	6, 38	x	O	
	7	x	O	
	10	x	O	
	11	x	O	
	64	O	O	
	65	x	O	
	66	x	O	
	67	x	O	
	84	x	O	
	91	x	O (Reverb)	
	93	x	O (Chorus)	
	98, 99	x	O	
	100, 101	x	O	
Prog Change	: True #	x *****	O 0-127	Prog. 1-128
System Exclusive		x	O	
System Common	: Song Pos : Song Sel : Tune	x x x	x x x	
System Real Time	: Clock : Commands	x x	x x	
Aux Message	: All sound off : Reset all controllers : Local ON/OFF : All Notes OFF : Active Sense : Reset	x x x x O x	O (120, 126, 127) O x O (123-127) O x	
Notes		* 1 O x is selectable. * 2 Recognized as M=1 even if M≠1.		

Mode 1 : OMNI ON, POLY

Mode 2 : OMNI ON, MONO

O : Yes

Mode 3 : OMNI OFF, POLY

Mode 4 : OMNI OFF, MONO

X : No

Specifications

Keyboard (Organ)

AT-90: Atelier

● Keyboard

Upper 56 Keys Lower 76 Keys;
Pedal board 25 Keys

● Footage Tablet

Upper Organ Type:
Flute1, Flute2, Pipe, Theater

Upper Footage:
16', 8', 5-1/3', 4', 2-2/3', 2', 1-3/5', 1-1/3', 1'

Percussion:
4', 2-2/3', Fast Decay

* *Percussion can be applied to the Upper Organ Type.*

Lower Organ Type:
Flute1, Flute2, Pipe, Theater

Lower Footage:
16', 8', 5-1/3', 4', 2-2/3', 2', 1-3/5', 1-1/3', 1'

● Voices (168 Voices)

Upper Organ:
Full, Jazz, Rock, Pipe, Theater, etc.

Upper Symphonic:
Strings, Slow Strings, Synth Strings, Synth Pad, Choir, etc.

Upper Orchestral:
Piano, E.Piano, A.Guitar, E.Guitar, Brass, Harpsi, Harp, Vibes, Marimba, Mandolin, Banjo, Accordion, Harmonica, etc.

Lower Organ:
Full, Lower, Pipe, Theater, etc.

Lower Symphonic:
Strings, Synth Strings, Choir, etc.

Lower Orchestral:
Piano, E.Piano, A.Guitar, Brass, Harpsi, Harp, Vibes, Marimba, Accordion, Harmonica, etc.

Solo:
Violin, Trumpet, Sax, Flute, Oboe, Clarinet, etc.

Pedal Organ:
Organ, Pipe, Theater, etc.

Pedal Orchestral:

String, Contrabass, Electric, etc.

* *Any two of the 168 voices (except the preset ones) can be assigned to each Others button. (One for Pedal Organ and Pedal Orchestral Others buttons.)*

● Rhythms (53 Rhythms, Variation/Original)

Big Band, Swing, Country1, Country2, 50's, Ballad, Trad, Latin1, Latin2, Showtime, Pops, Gospel, March, Waltz, etc.

* *Music Style Disks (sold separately; MSA series) can provide additional Music Styles.*

● Number of accompaniment/SMF play voices

226 Voices

● Number of manual drums sets

8 Sets

● Number of sound effects sets

1 Set

● Number of manual percussion sets

1 Set

● Effects

Rotary Sound, Chorus, Reverb, Sustain, Vibrato, Pitch Bend, Glide

● Harmony Intelligence

Duet, Organ, Combo, Strings, Hymn, Block, Big Band, Country

● Arranger function

Arranger On/Off, Chord Intelligence, Leading Bass, Advanced/Basic, Break, One Touch Program

● Number of registration memories

12

● Composer

Tracks : 7
Note Storage : approx. 40,000 notes
Song Length : max. 999 measures
Tempo : Quarter note = 30 to 250
Resolution : 120 ticks per quarter note
Recording : Realtime

● Storage: 3.5 inch micro floppy disk

Disk format:
720K bytes (2DD), 1.44M bytes (2HD)

Songs:
max. 56 (2DD), max. 99 (2HD)

● Rated power output

60W × 2, 120W (low-lange)

● Speakers

full-range: 8cm × 2 (monitor)
3-3/16inches × 2 (monitor)
tweeter: 5cm × 4
2inches × 4
full-range: 16cm × 4
6-5/16inches × 4
woofer: 30cm × 1
11-13/16inches × 1

● Display

16 characters, 2 lines (backlit LCD)

● Disk drive

3.5 inch micro floppy disk drive (2DD/2HD)

● Pedals

Damper pedals
Expression pedal
Two foot switches (assignable)

● Connectors

Phones jack(Stereo)
AC inlet
Pedal connector
MIDI connectors(In/Out)
Audio output jacks(L(MONO)/R)
Audio input jacks(L(MONO)/R)
Mic jack
Computer

● Power supply

AC117V, AC230V or AC240V

● Power consumption

528W (AC117V)
429W (AC230V)
431W (AC240V)

● Finish

Cherry Wood

● Dimensions

Console:

1368(W) × 1028(D) × 1318(H) mm (Including
pedal board and music rest)
53-7/8(W) × 40-1/2(D) × 51-15/16(H) inches

Bench:

1048(W) × 353(D) × 622(H) mm
41-5/16(W) × 13-15/16(D) × 24-1/2(H) inches

● Weight

Console: 140.5 kg/309 lbs 12 oz
Pedal board: 24.0 kg/52 lbs 15 oz
Total: 164.5 kg/362 lbs 11 oz
Bench: 18.5 kg/40 lbs13 oz

● Accessories

Pedal board
Bench
Owner's manual
3.5 inch micro floppy disk (2HD)
Music style disk
Power cord

● Options

MIDI implementation
Music style disk (MSA series)

** In the interest of product development, the specifications and/or appearance of this product are subject to change without prior notice.*

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This product complies with the requirements of European Directives EMC 89/336/EEC and LVD 73/23/EEC.

For Europe

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For the USA

CLASS B

NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B

AVIS

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